Fig. 1

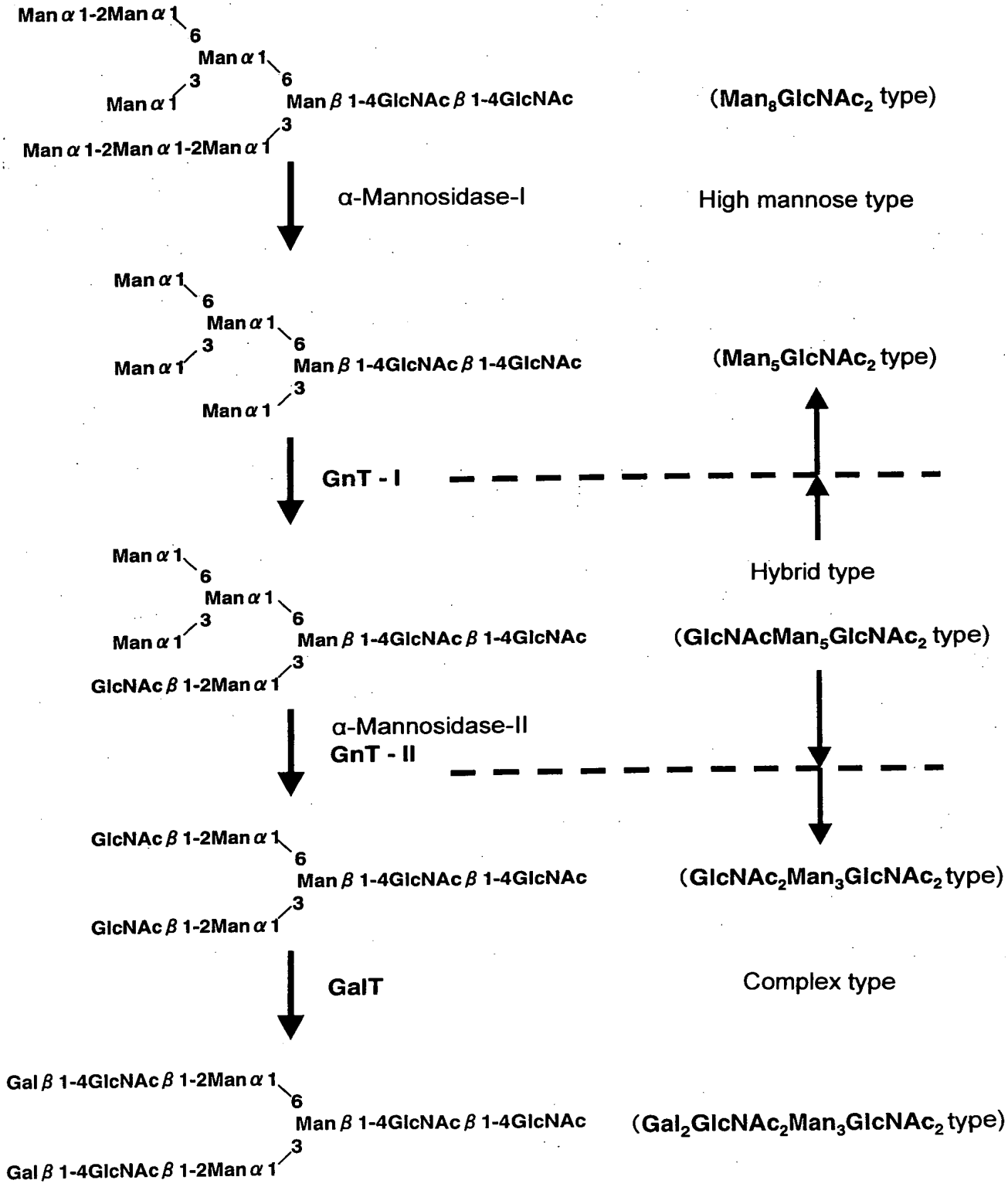
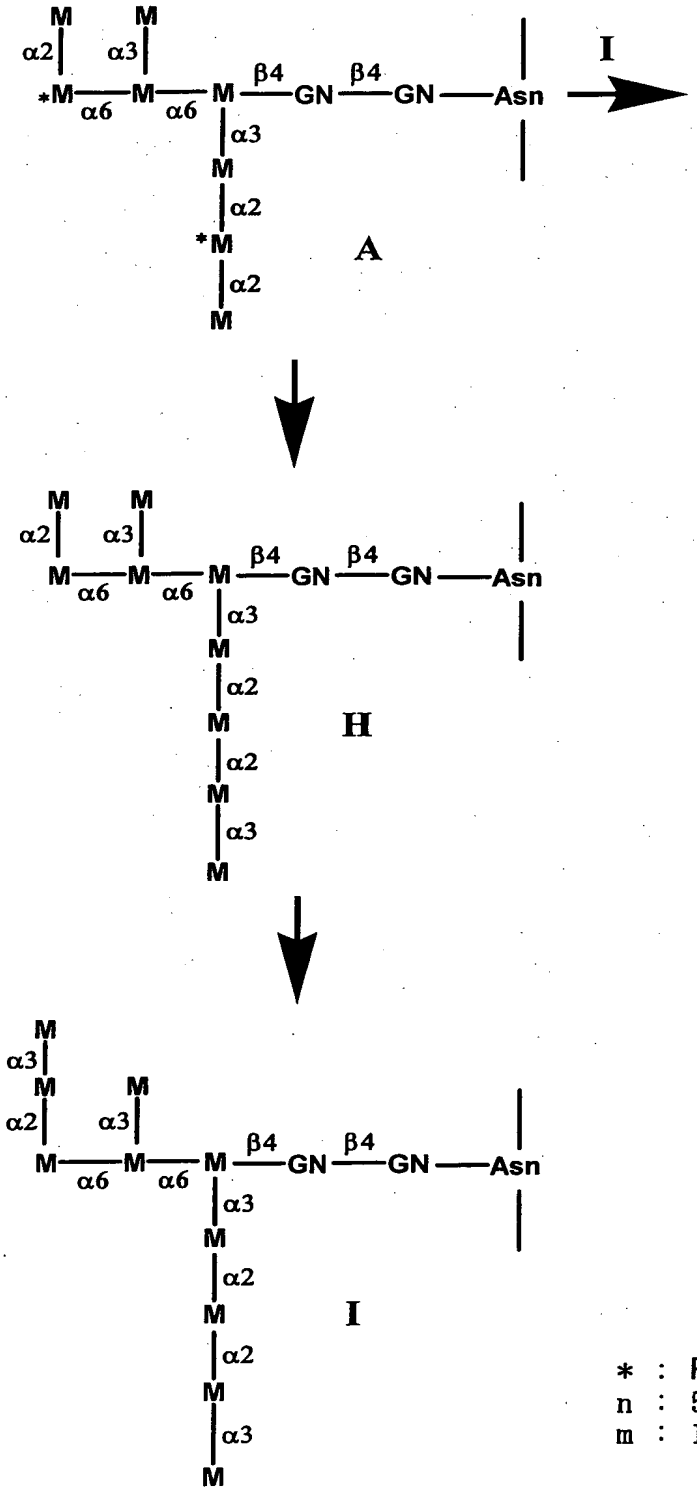
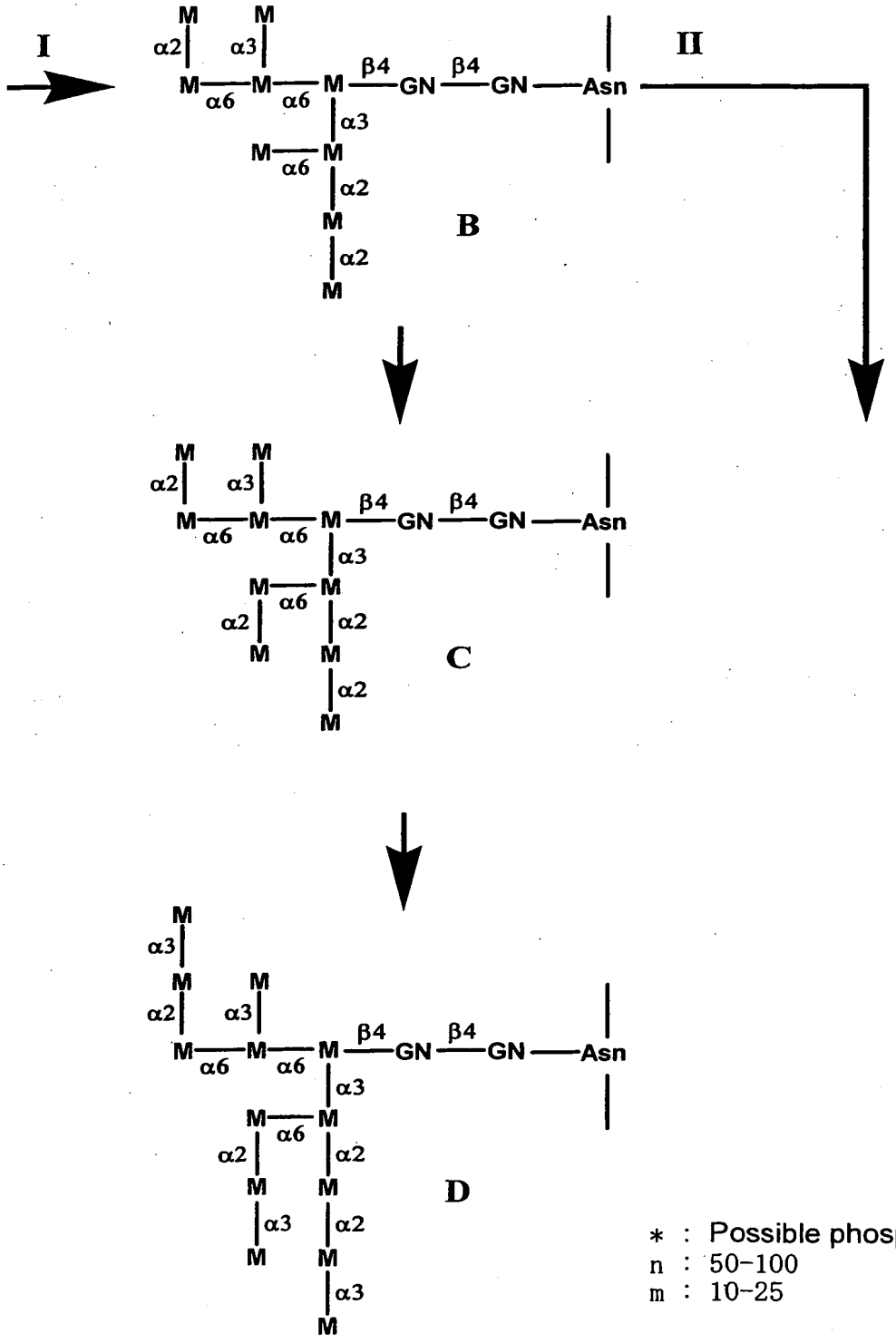


Fig. 2



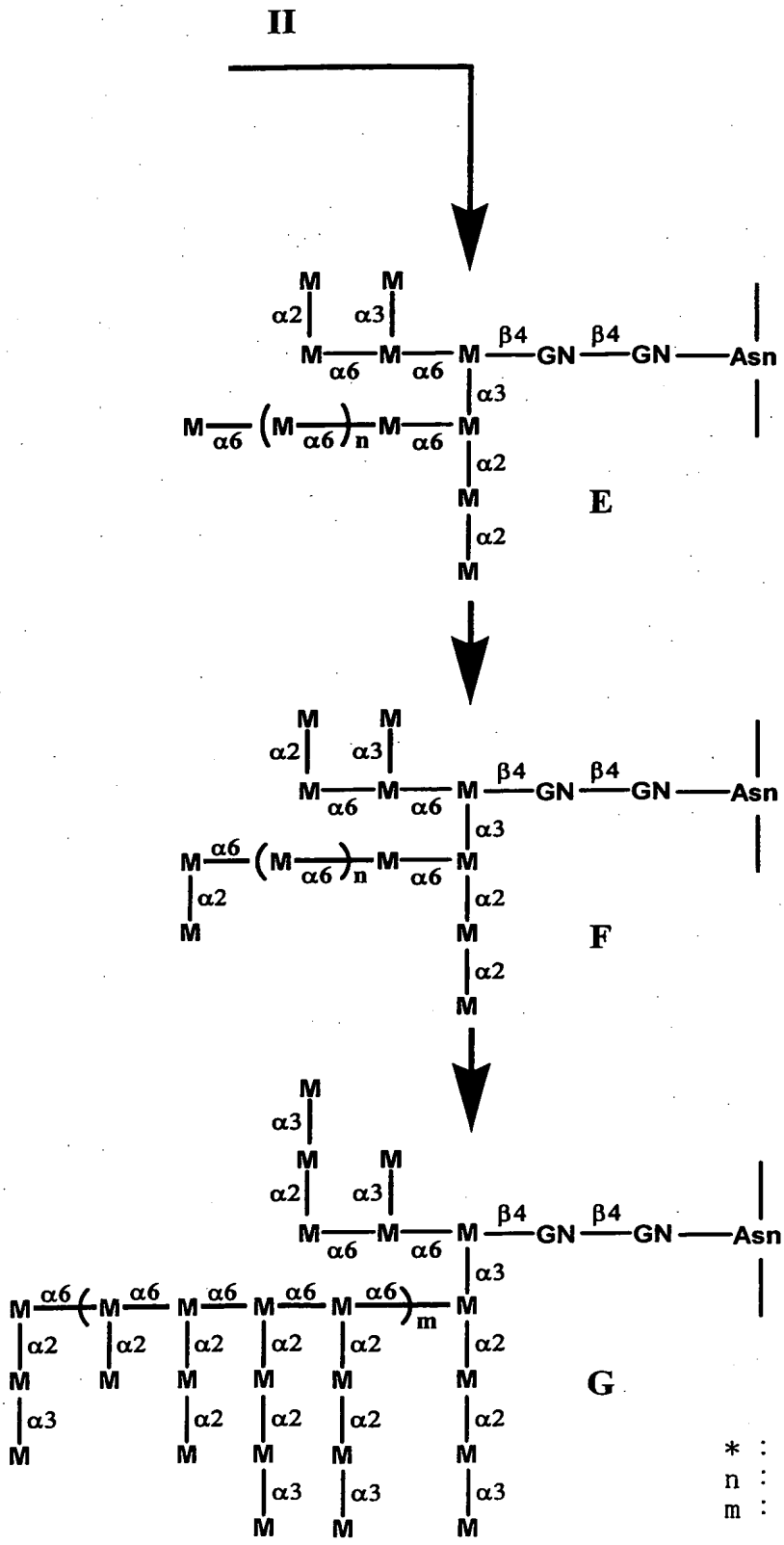
* : Possible phosphorylation site
n : 50–100
m : 10–25

Fig. 2



* : Possible phosphorylation site
n : 50-100
m : 10-25

Fig. 2



* : Possible phosphorylation site
n : 50–100
m : 10–25

Fig. 3

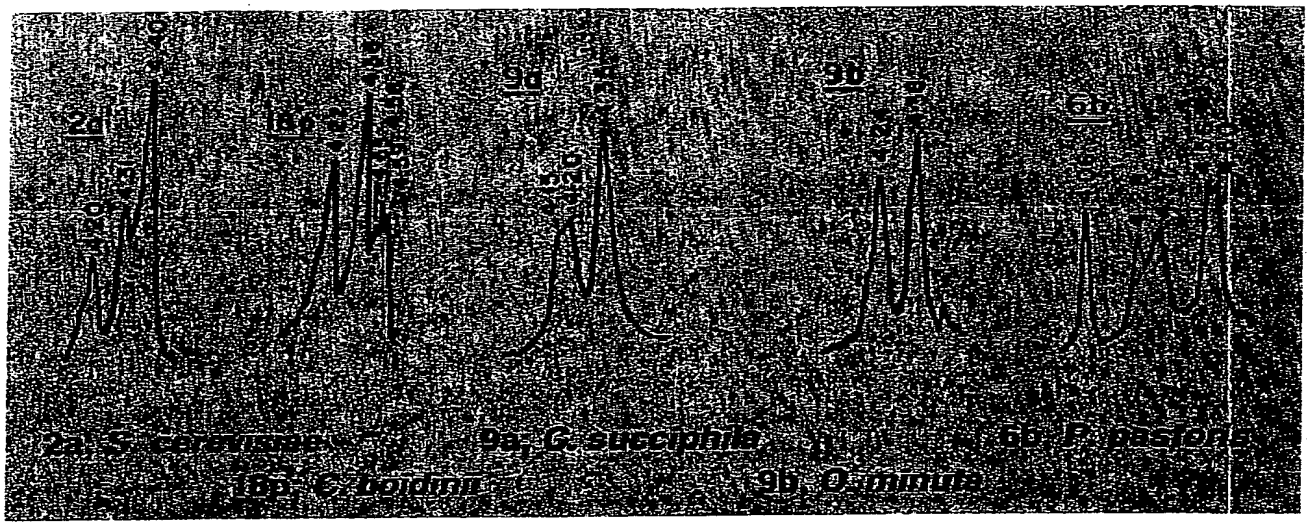


Fig. 4

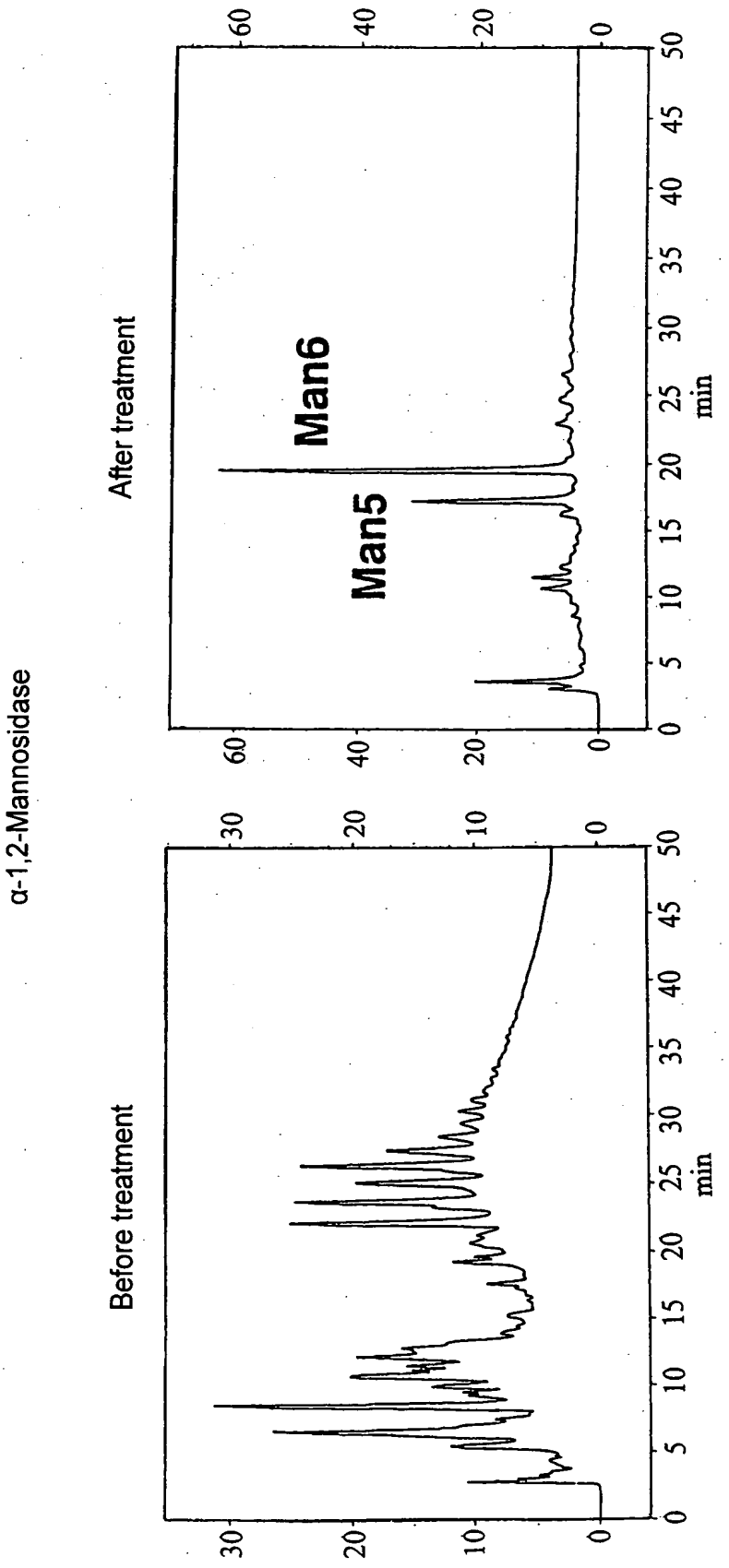

Ogataea minuta
α-1,2-Mannosidase
Before treatment
After treatment
Man6
Man5
min
min

Fig. 4

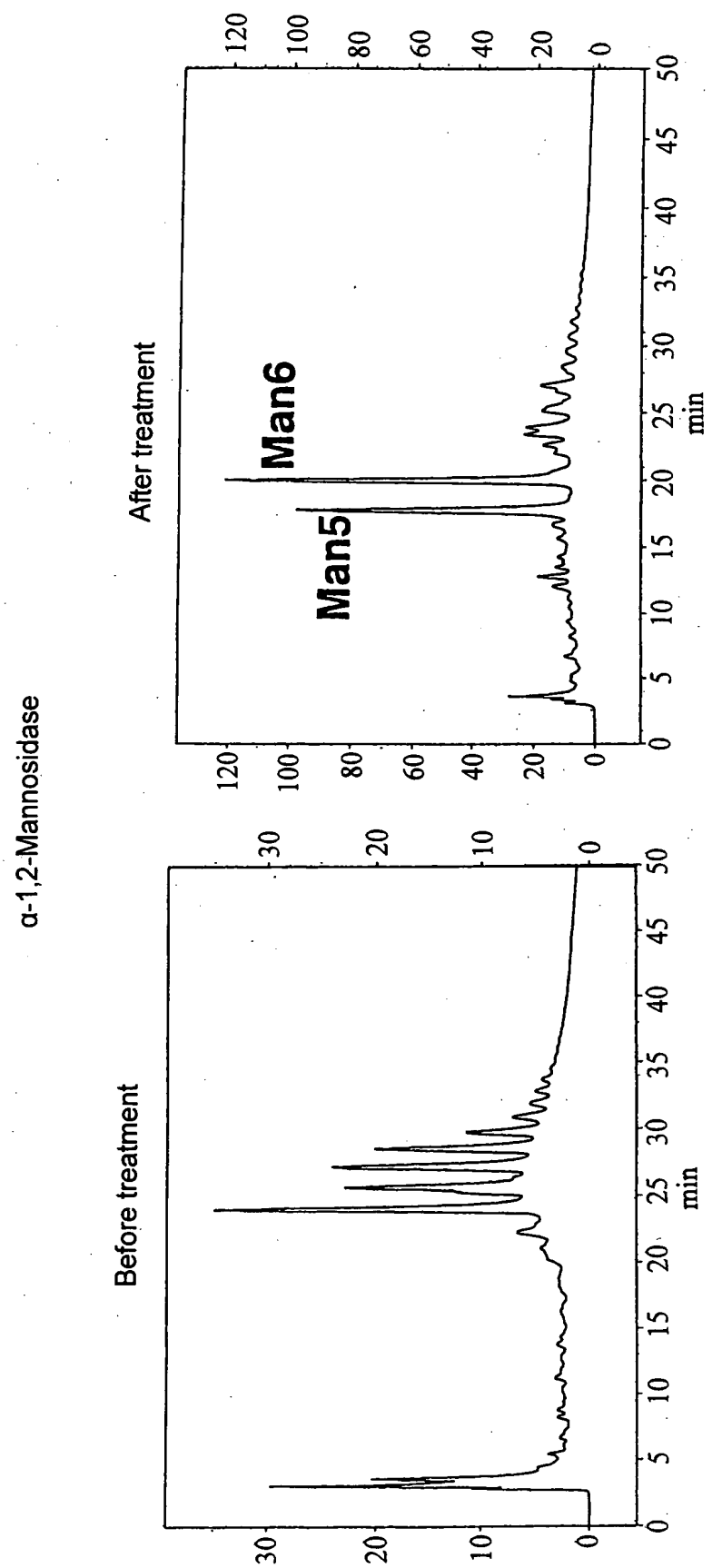

α-1,2-Mannosidase
Candida succiphila
After treatment
Man6
Man5
Before treatment
min
min

Fig. 4

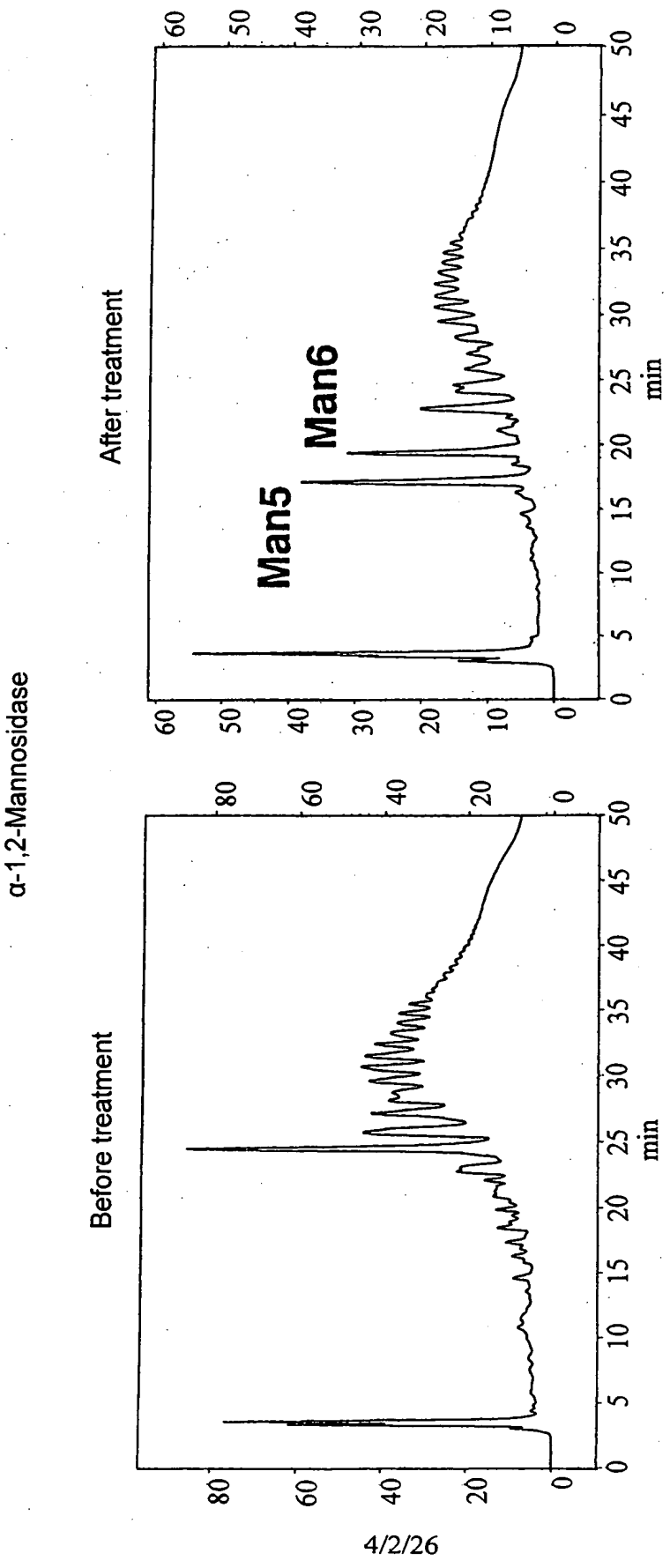

α-1,2-Mannosidase
Candida boidinii
Before treatment
After treatment
Man5
Man6
min
min

Fig. 4

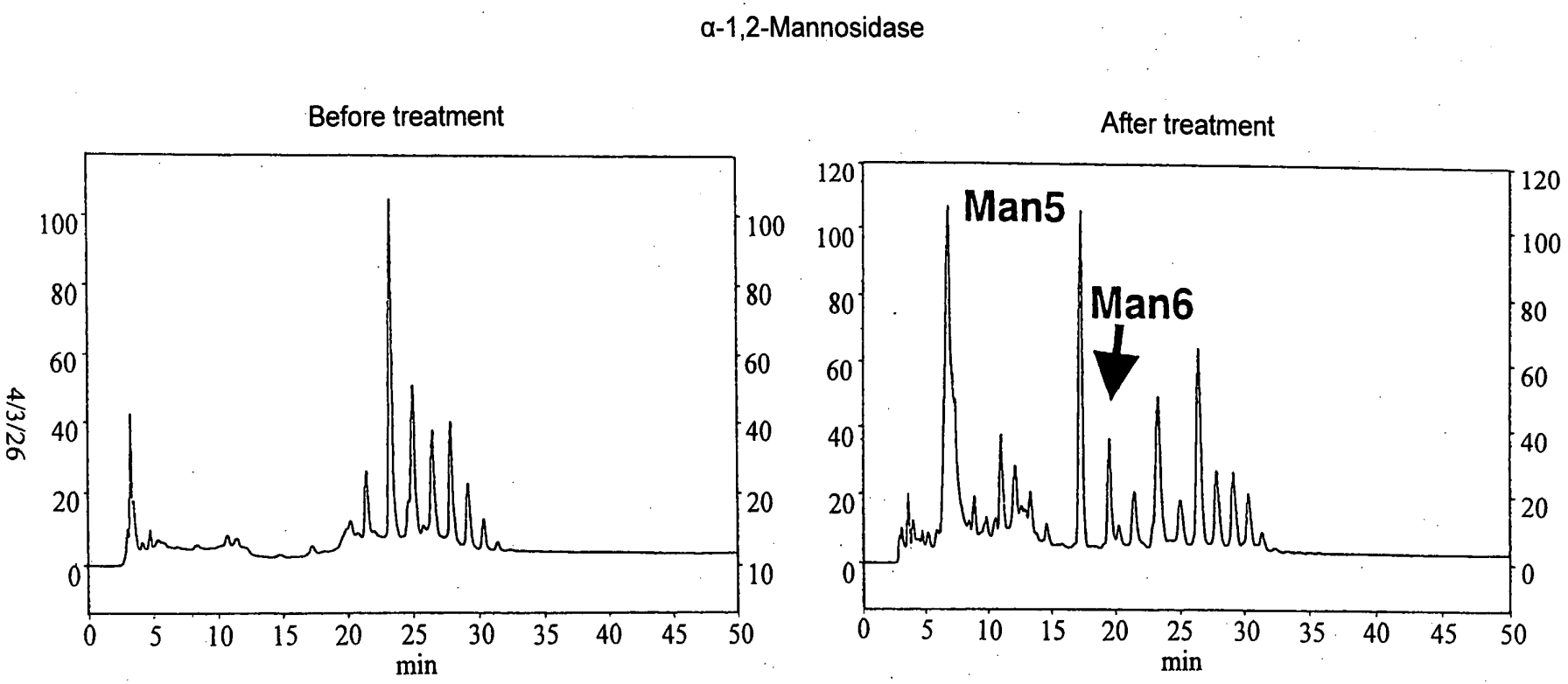


Fig. 5

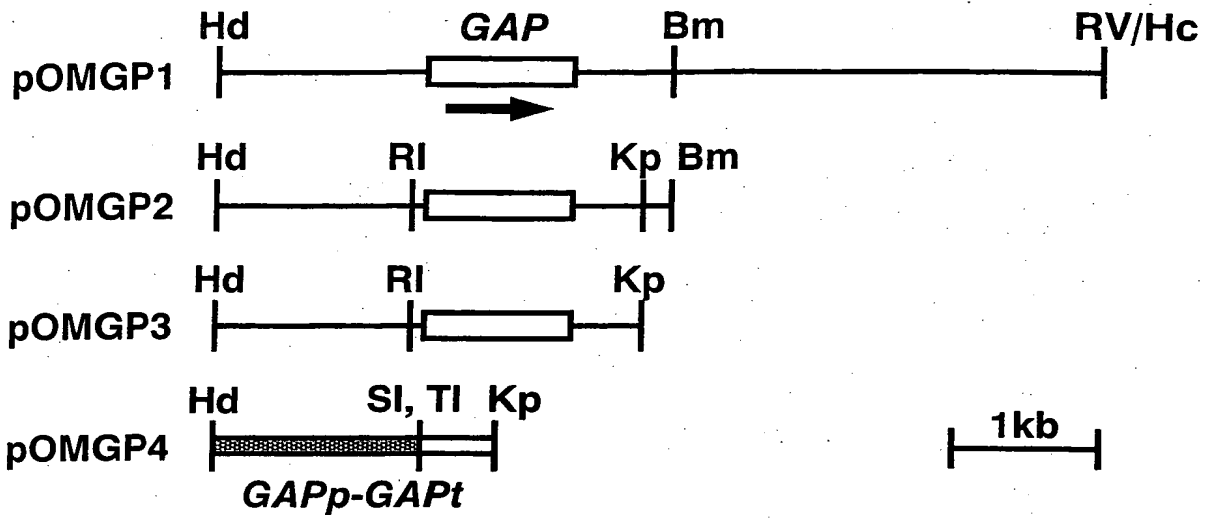

Hd
GAP
Bm
RV/Hc
pOMGP1
Hd
RI
Kp Bm
pOMGP2
Hd
RI
Kp
pOMGP3
Hd
SI, TI Kp
pOMGP4
GAPp-GAPt
1kb

Fig. 6

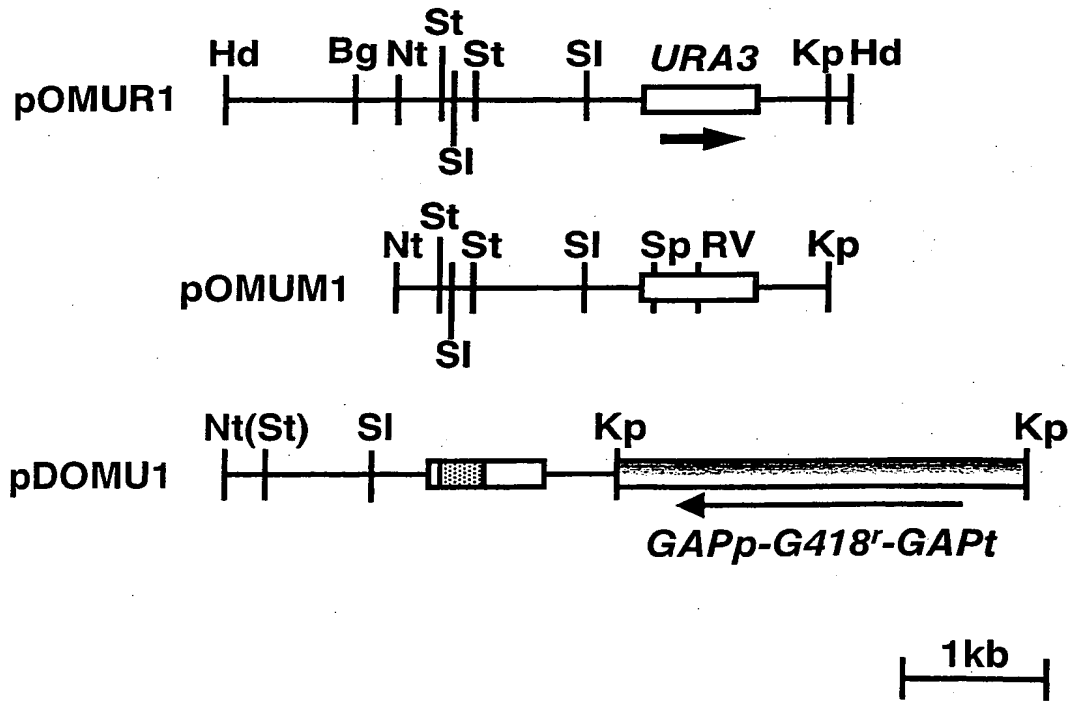

St
Hd
Bg Nt
St
SI
URA3
Kp Hd
pOMUR1
SI
St
Nt
St
SI
Sp RV
Kp
pOMUM1
SI
Nt(St)
SI
Kp
Kp
pDOMU1
GAPp-G418r-GAPt
1kb

Fig. 7

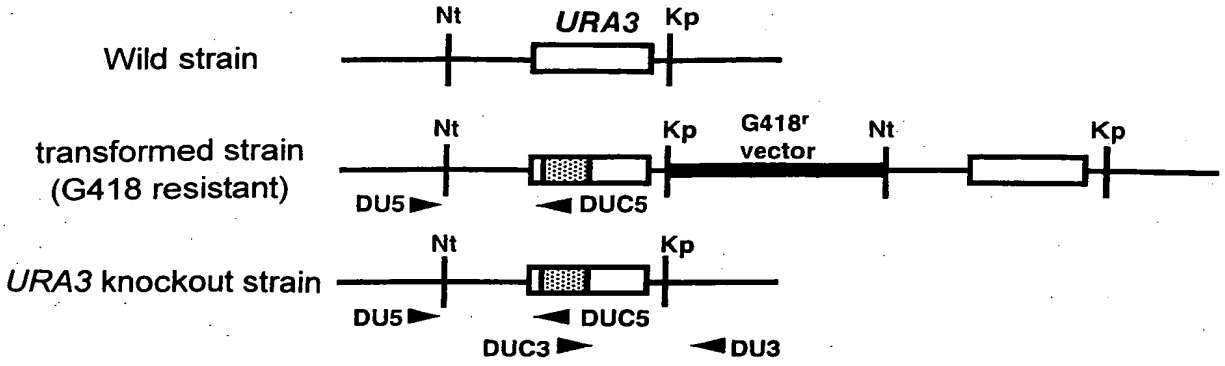


Fig. 8

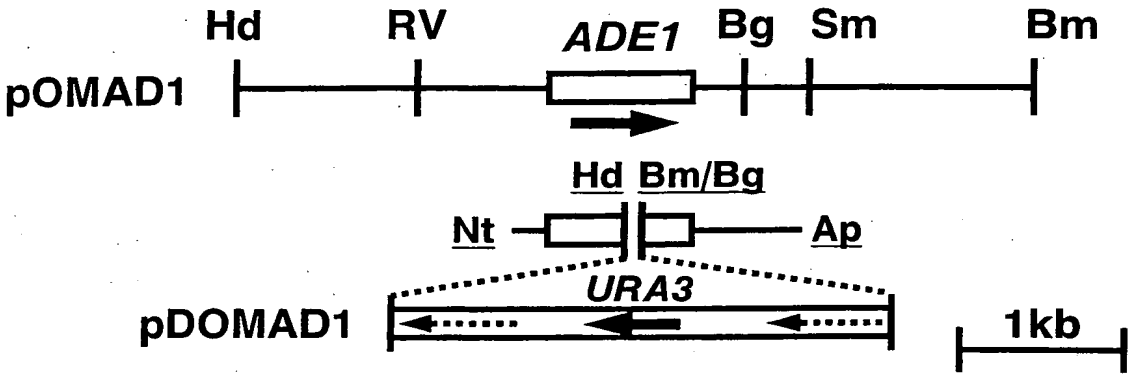


Fig. 9

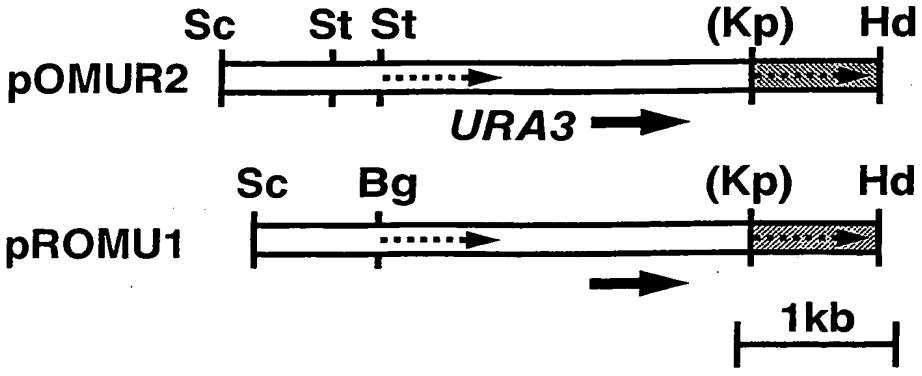


Fig. 10

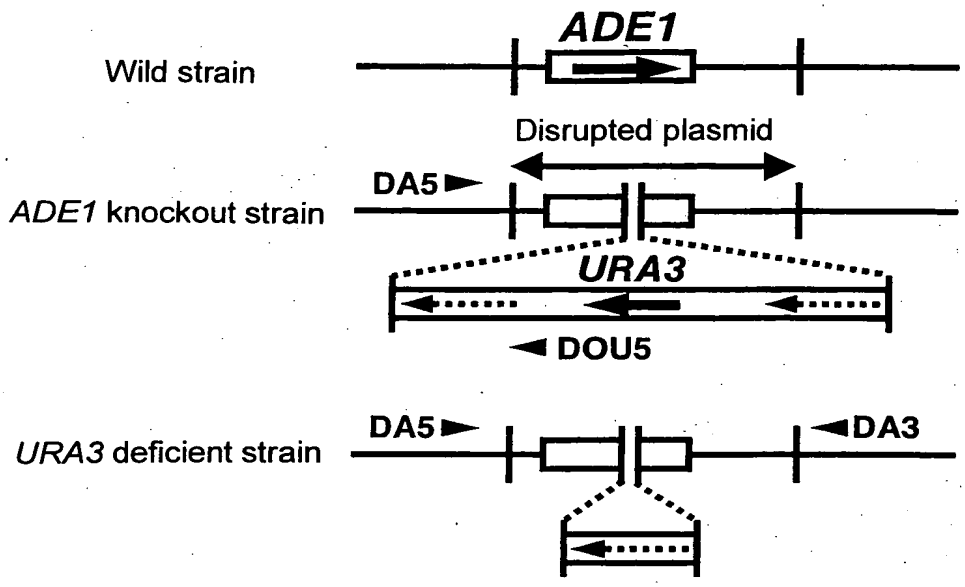

Wild strain
ADE1
Disrupted plasmid
DA5
ADE1 knockout strain
URA3
DOU5
URA3 deficient strain
DA5
DA3

Fig. 11

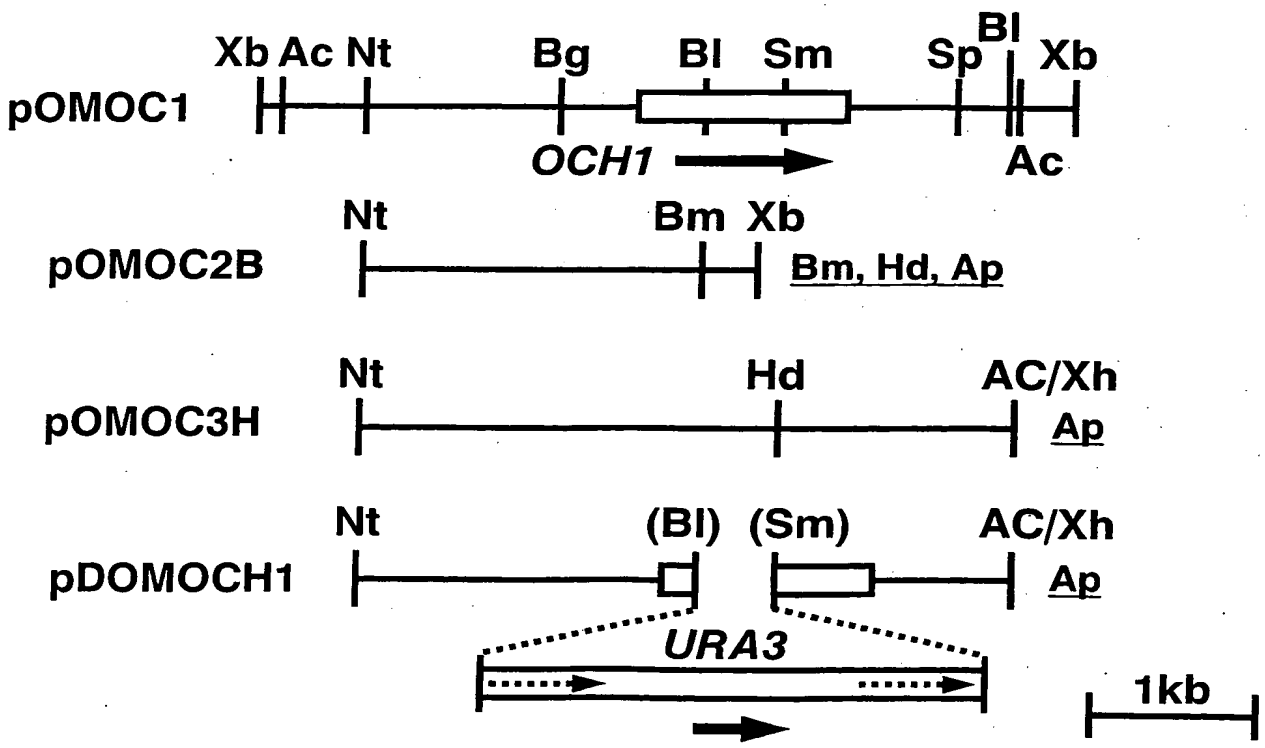

pOMOC1
Xb Ac Nt
Bg
Bl Sm
Sp
Bl
Xb
OCH1
Ac
pOMOC2B
Nt
Bm Xb
Bm, Hd, Ap
pOMOC3H
Nt
Hd
AC/Xh
Ap
pDOMOCH1
Nt
(Bl) (Sm)
AC/Xh
Ap
URA3
1kb

Fig. 12

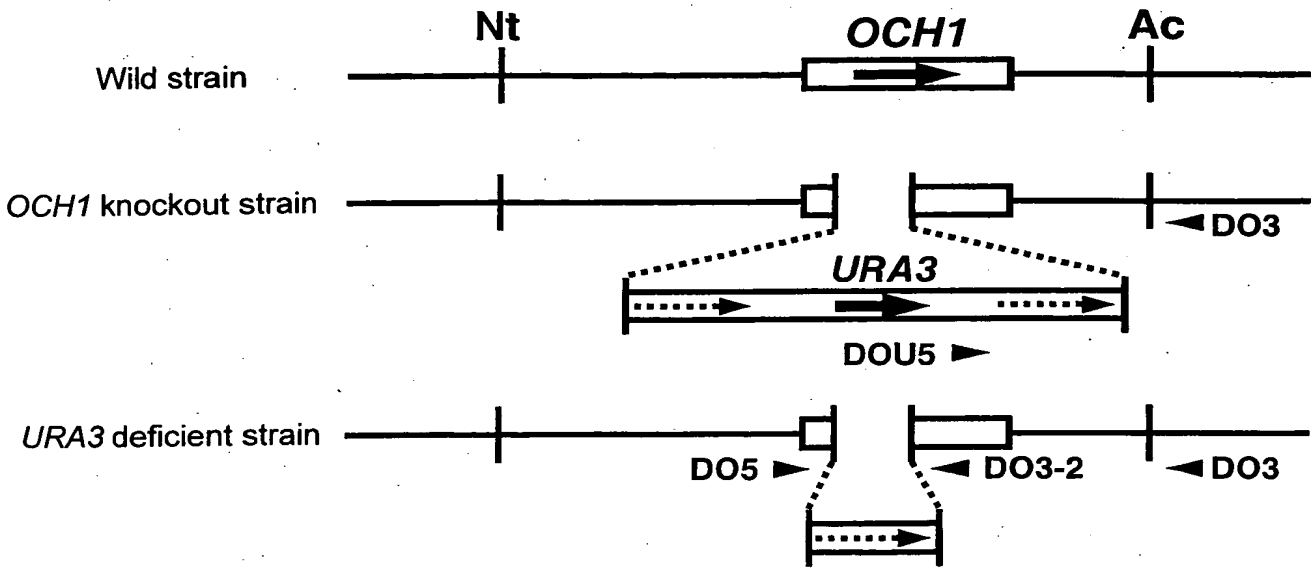

Nt
OCH1
Ac
Wild strain
OCH1 knockout strain
DO3
URA3
DOU5
URA3 deficient strain
DO5
DO3-2
DO3

Fig. 13

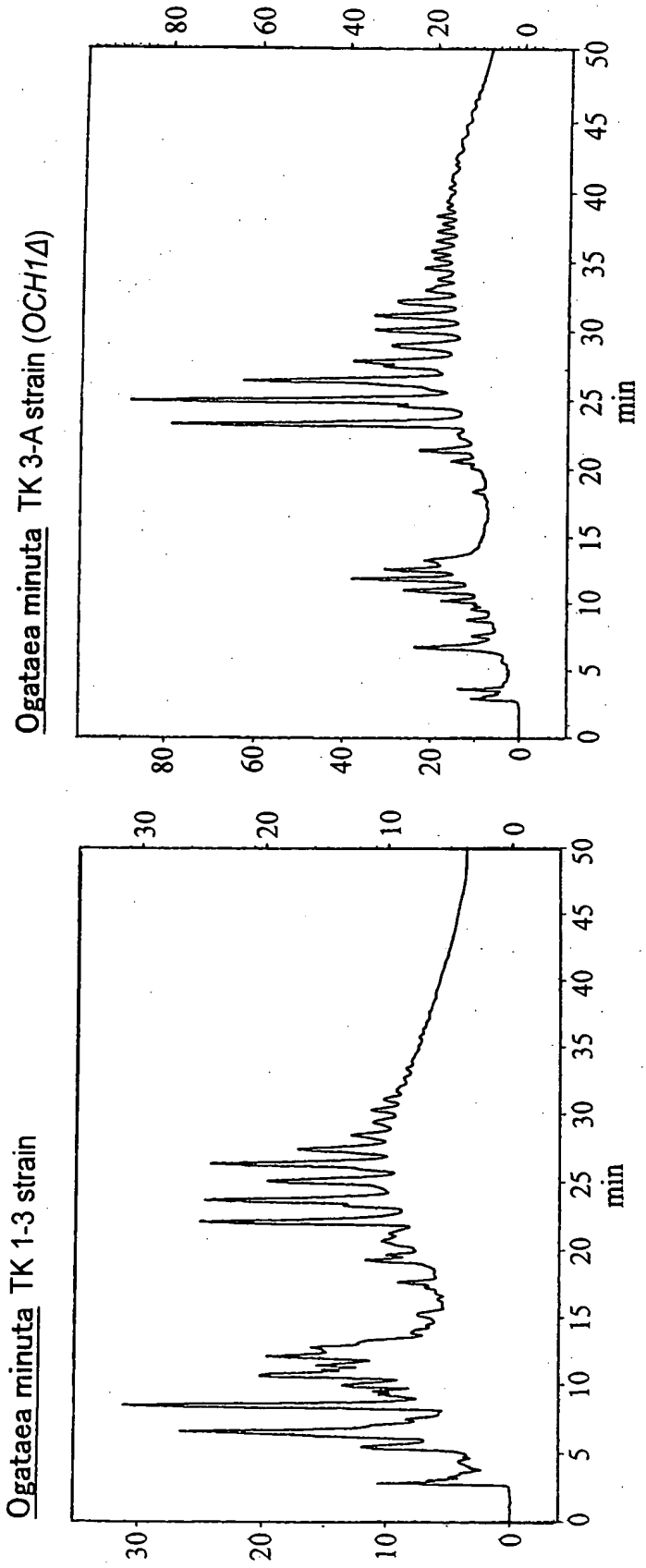

Ogataea minuta TK 3-A strain (OCH1Δ)
Ogataea minuta TK 1-3 strain
min
Amide column before digested with α-1,2-mannosidase

Fig. 13

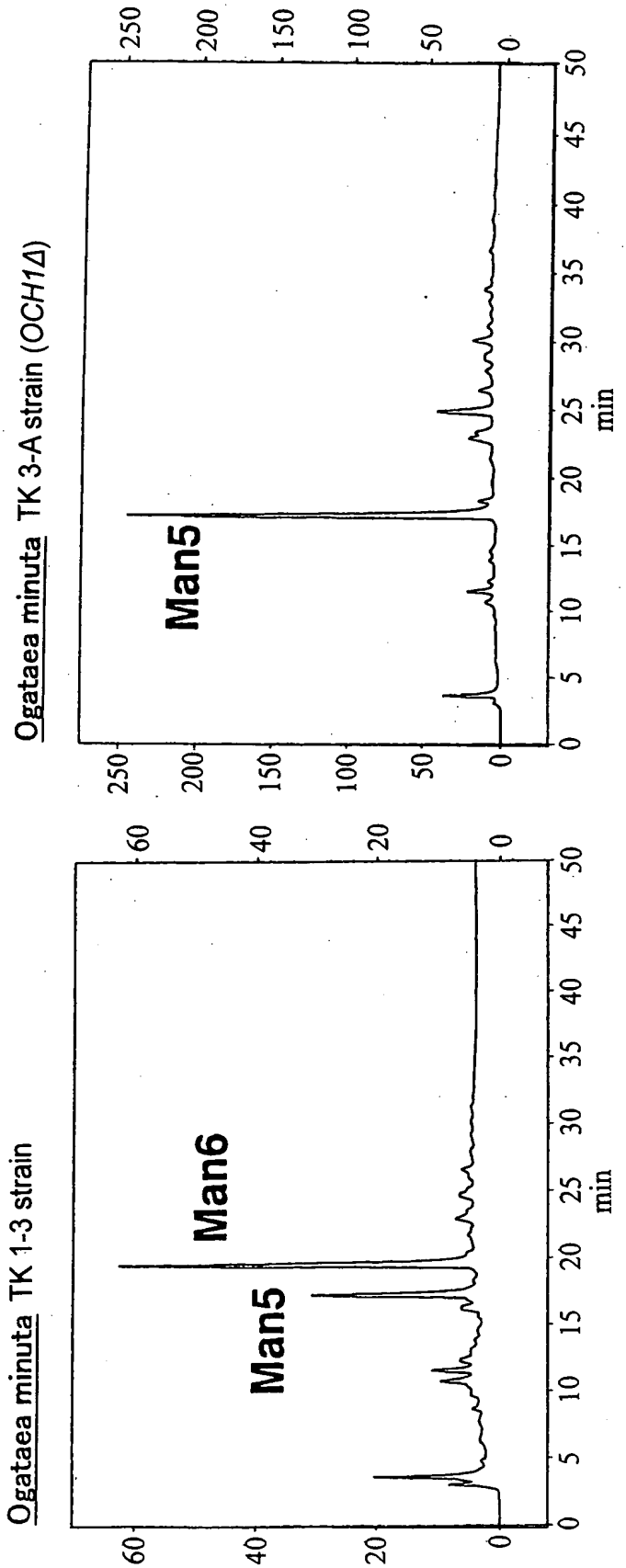

Ogataea minuta TK 1-3 strain
Man6
Man5
min
Ogataea minuta TK 3-A strain (OCH1Δ)
Man5
min
Amide column after digested with α-1,2-mannosidase

Fig. 13

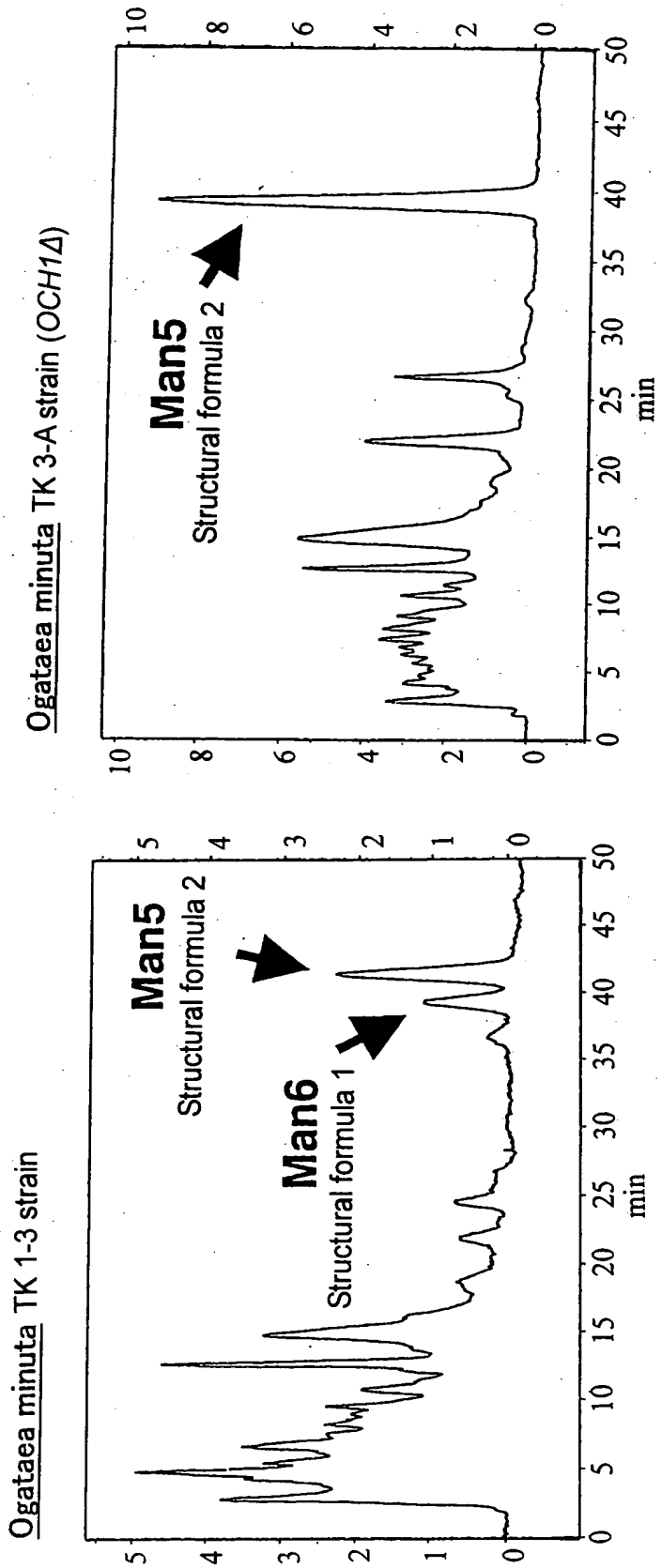

Ogataea minuta TK 1-3 strain
Man5
Structural formula 2
Man6
Structural formula 1
min
Ogataea minuta TK 3-A strain (OCH1Δ)
Man5
Structural formula 2
min
Reverse phase column

Fig. 14

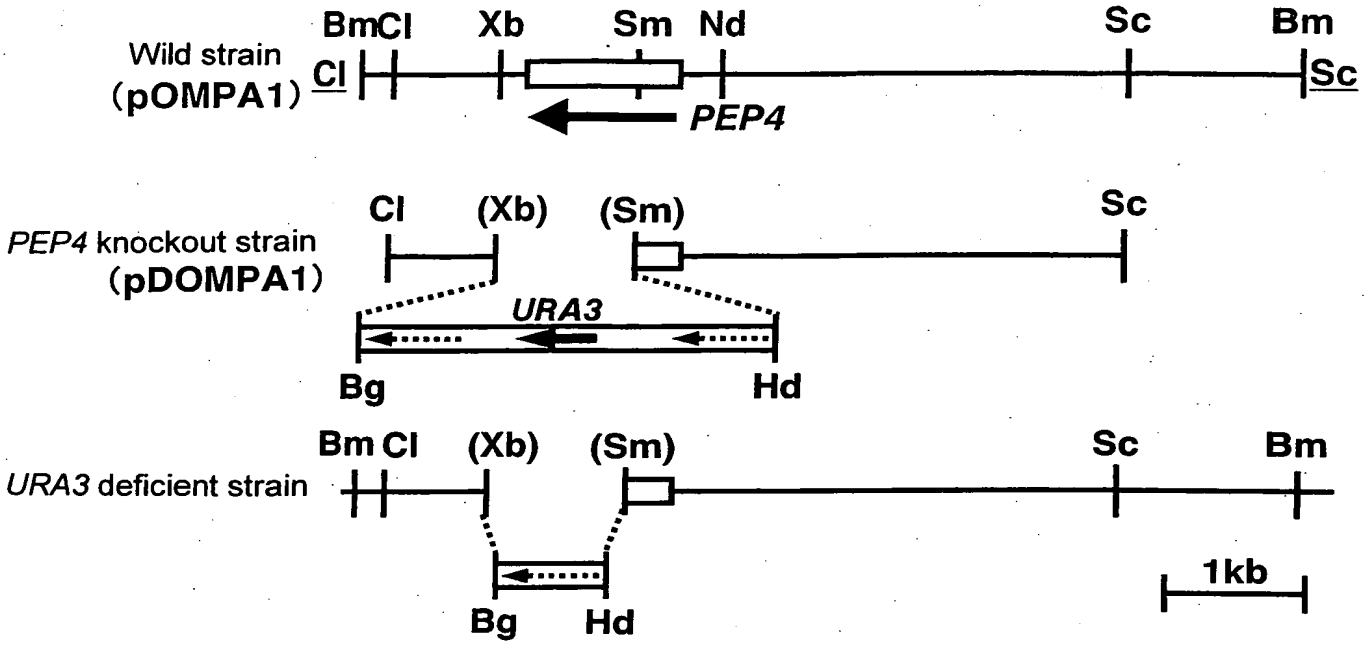

Wild strain
(pOMPA1)
BmCl
Cl
Xb
Sm
Nd
Sc
Bm
Sc
PEP4
PEP4 knockout strain
(pDOMPA1)
Cl
(Xb)
(Sm)
Sc
URA3
Bg
Hd
URA3 deficient strain
Bm Cl
(Xb)
(Sm)
Sc
Bm
1kb
Bg
Hd

Fig. 15

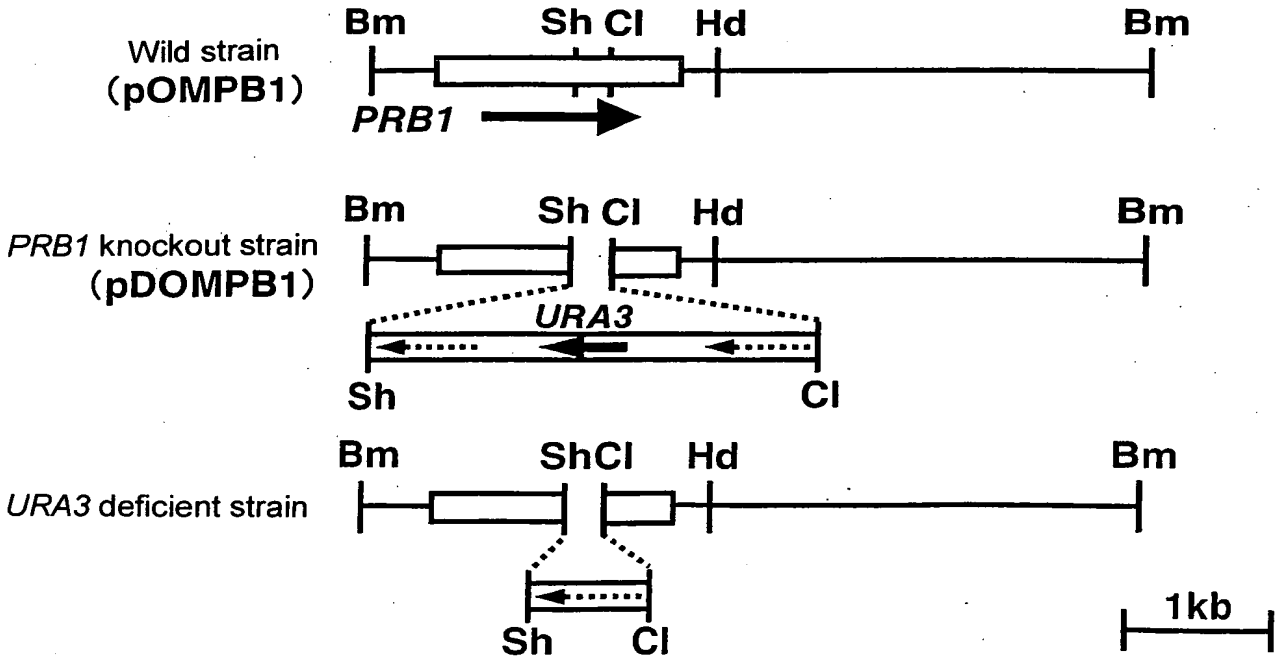

Wild strain
(pOMPB1)
Bm
Sh Cl
Hd
Bm
PRB1
PRB1 knockout strain
(pDOMPB1)
Bm
Sh Cl
Hd
Bm
URA3
Sh
Cl
URA3 deficient strain
Bm
ShCl
Hd
Bm
1kb
Sh
Cl

Fig. 16

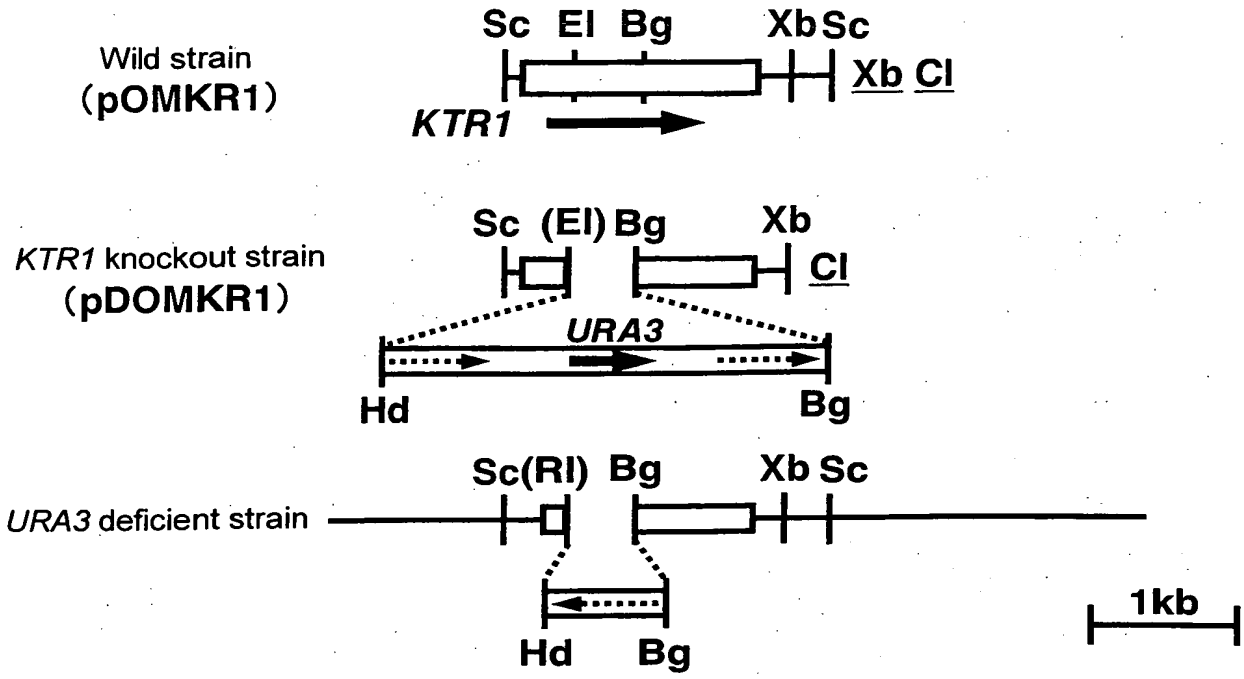

Wild strain
(pOMKR1)
Sc EI Bg Xb Sc
Xb Cl
KTR1
KTR1 knockout strain
(pDOMKR1)
Sc (EI) Bg Xb
Cl
URA3
Hd
Bg
URA3 deficient strain
Sc(RI) Bg Xb Sc
Hd Bg
1kb

Fig. 17

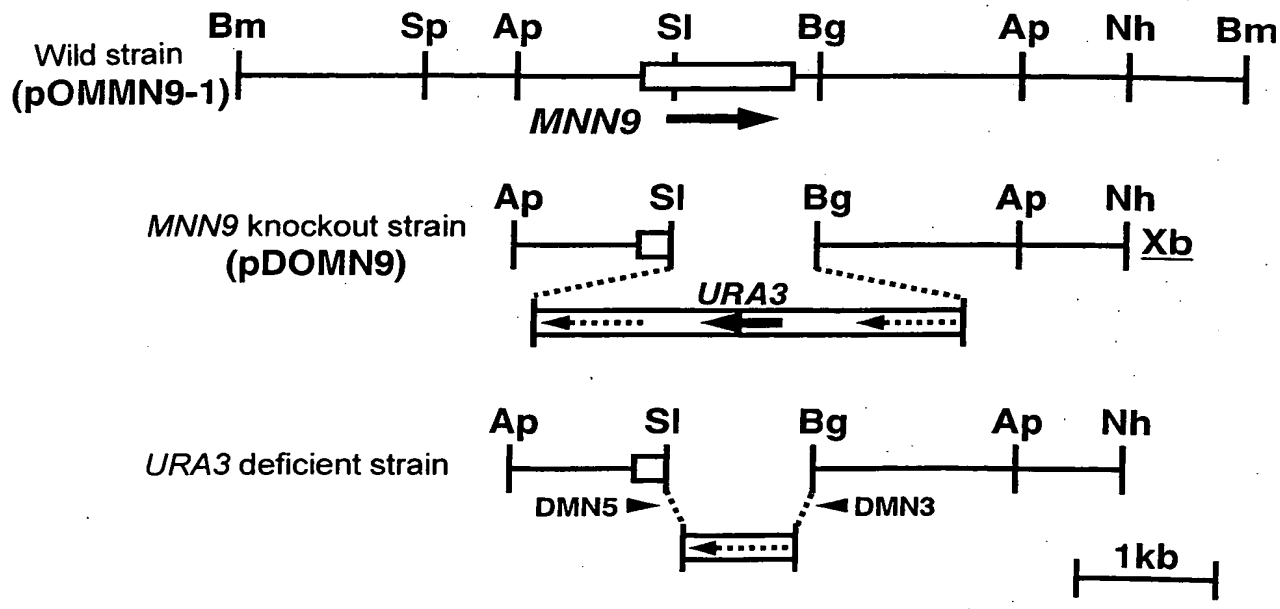

Wild strain
(pOMMN9-1)
Bm Sp Ap SI Bg Ap Nh Bm
MNN9
MNN9 knockout strain
(pDOMN9)
Ap SI Bg Ap Nh
Xb
URA3
URA3 deficient strain
Ap SI Bg Ap Nh
DMN5
DMN3
1kb

Fig. 18A

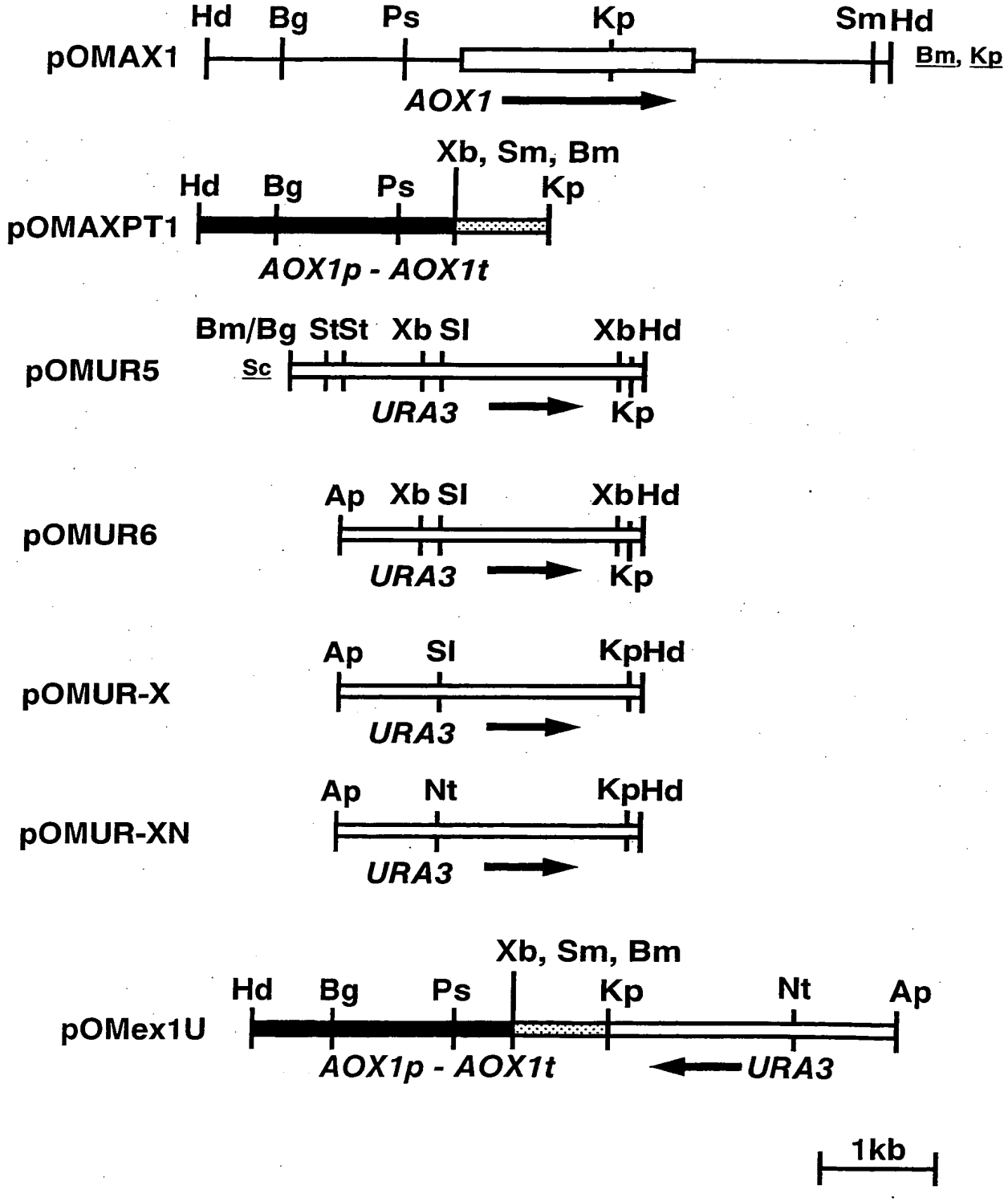

Hd
Bg
Ps
Kp
Sm
Hd
pOMAX1
Bm, Kp
AOX1
Xb, Sm, Bm
Hd
Bg
Ps
Kp
pOMAXPT1
AOX1p - AOX1t
Bm/Bg
StSt
Xb
Sl
Xb
Hd
pOMUR5
Sc
URA3
Kp
Ap
Xb
Sl
Xb
Hd
pOMUR6
URA3
Kp
Ap
Sl
Kp
Hd
pOMUR-X
URA3
Ap
Nt
Kp
Hd
pOMUR-XN
URA3
Xb, Sm, Bm
Hd
Bg
Ps
Kp
Nt
Ap
pOMex1U
AOX1p - AOX1t
URA3
1kb

Fig. 18B

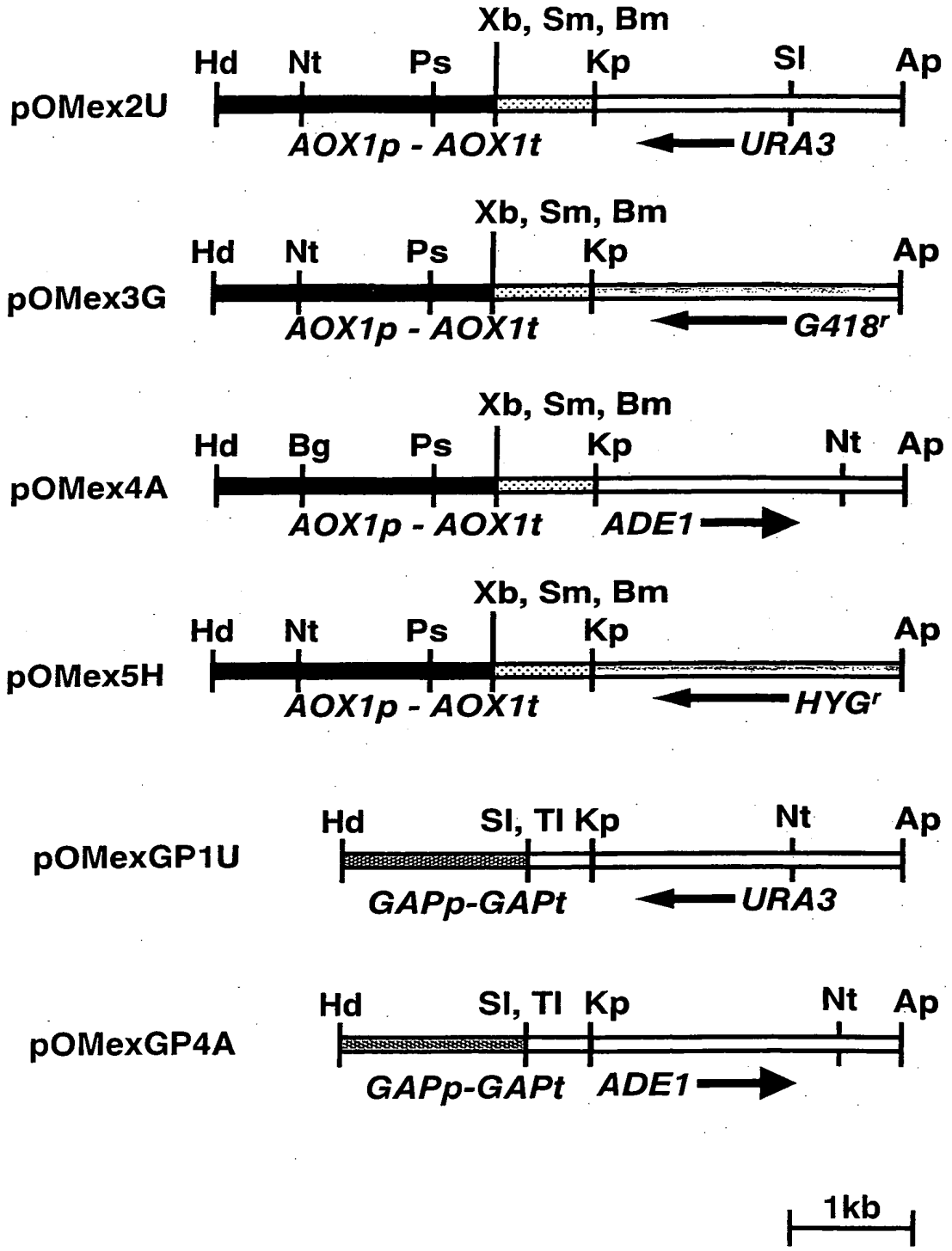


Fig. 19

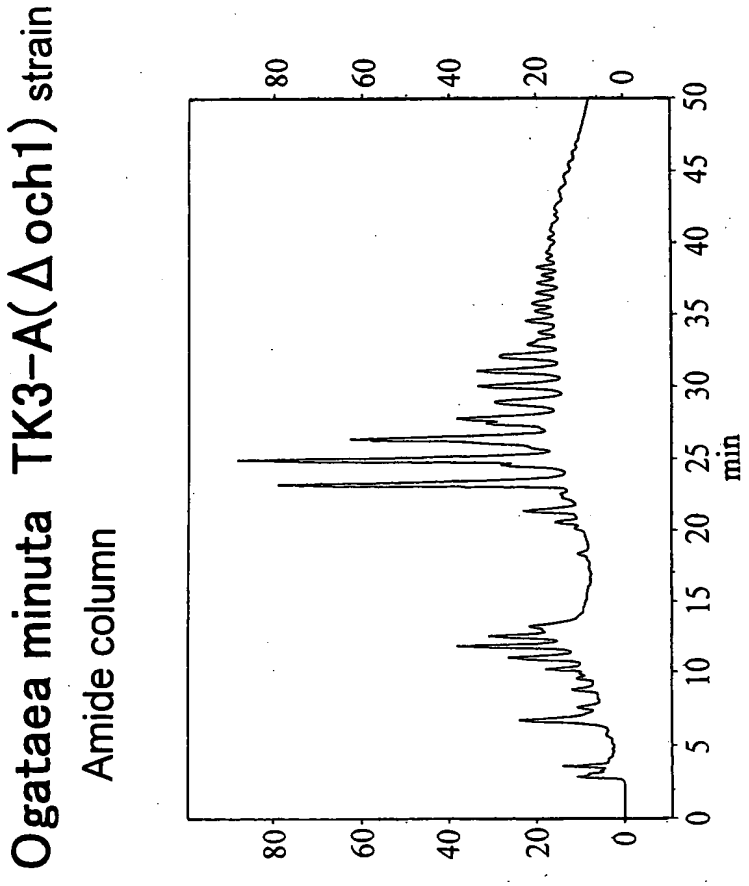


Fig. 19

Ogataea minuta TK3-A(Δoch1+α-mannosidase) strain

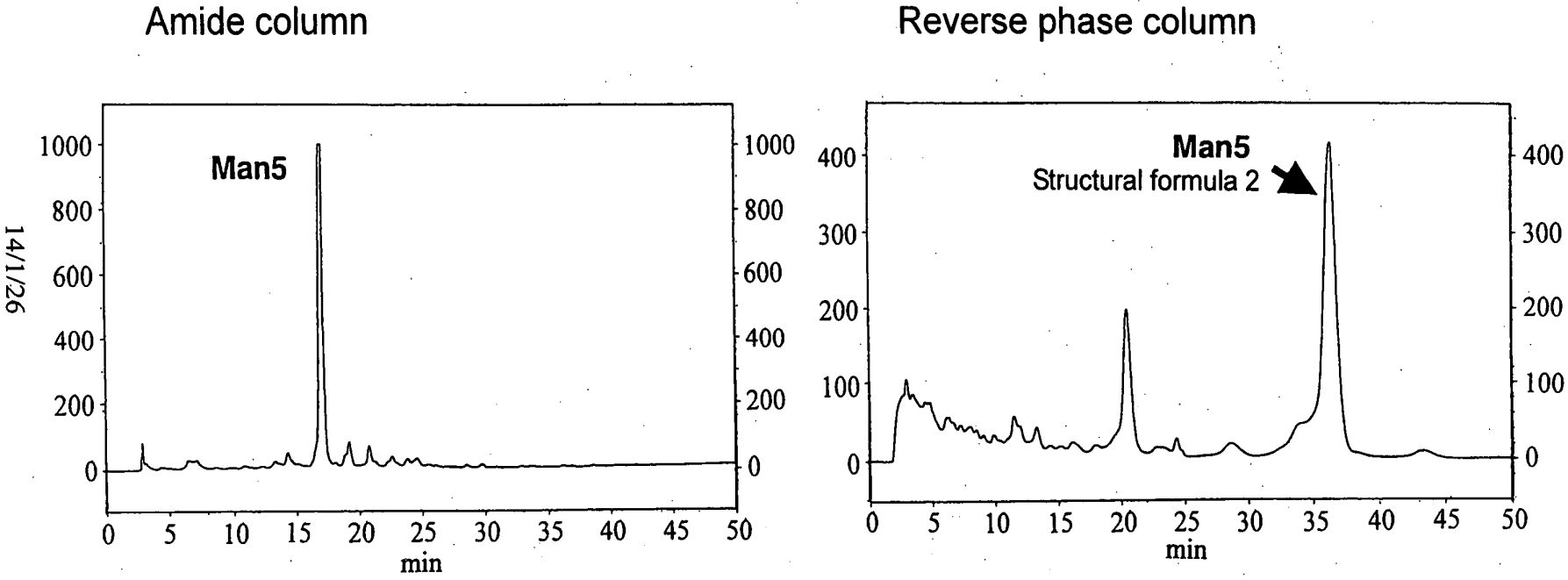


Fig. 20

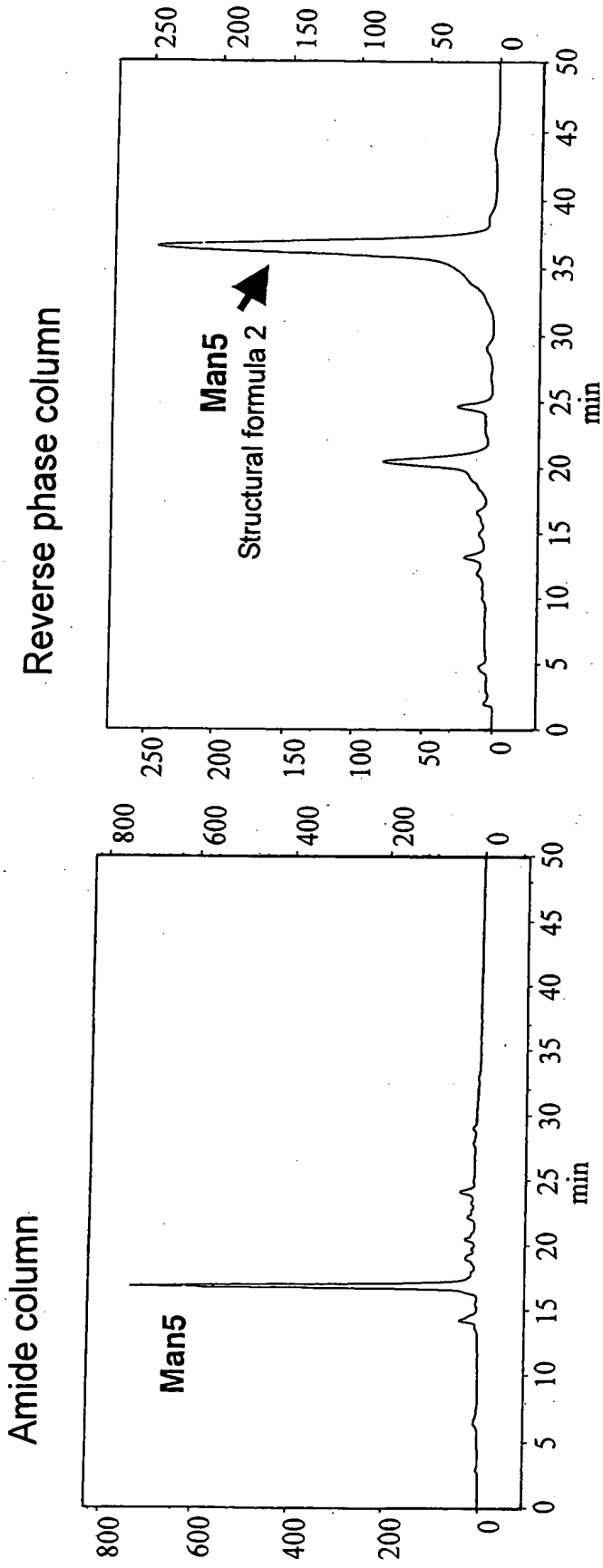
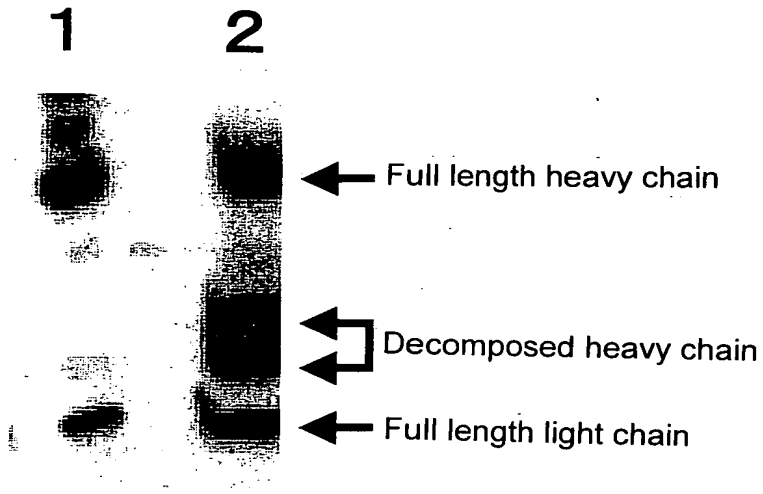

Reverse phase column
Man5
Structural formula 2
min
Amide column
Man5
min

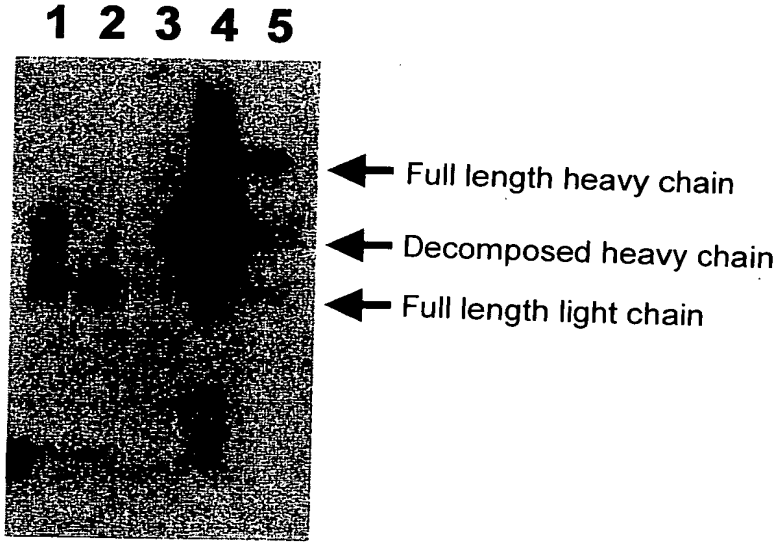
Fig. 21



1: Control antibody

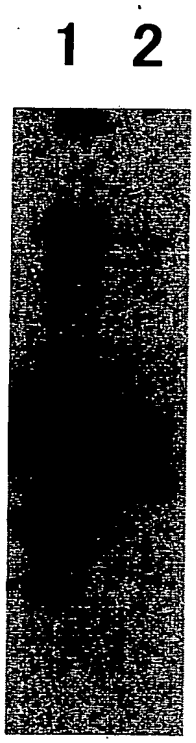
2: Antibody produced by *Ogataea minuta* TK9-IgB-aM strain

Fig. 22



1. Culture supernatant
2. Column non-adsorbed fraction
3. Wash fraction
4. Elution fraction
5. Control antibody

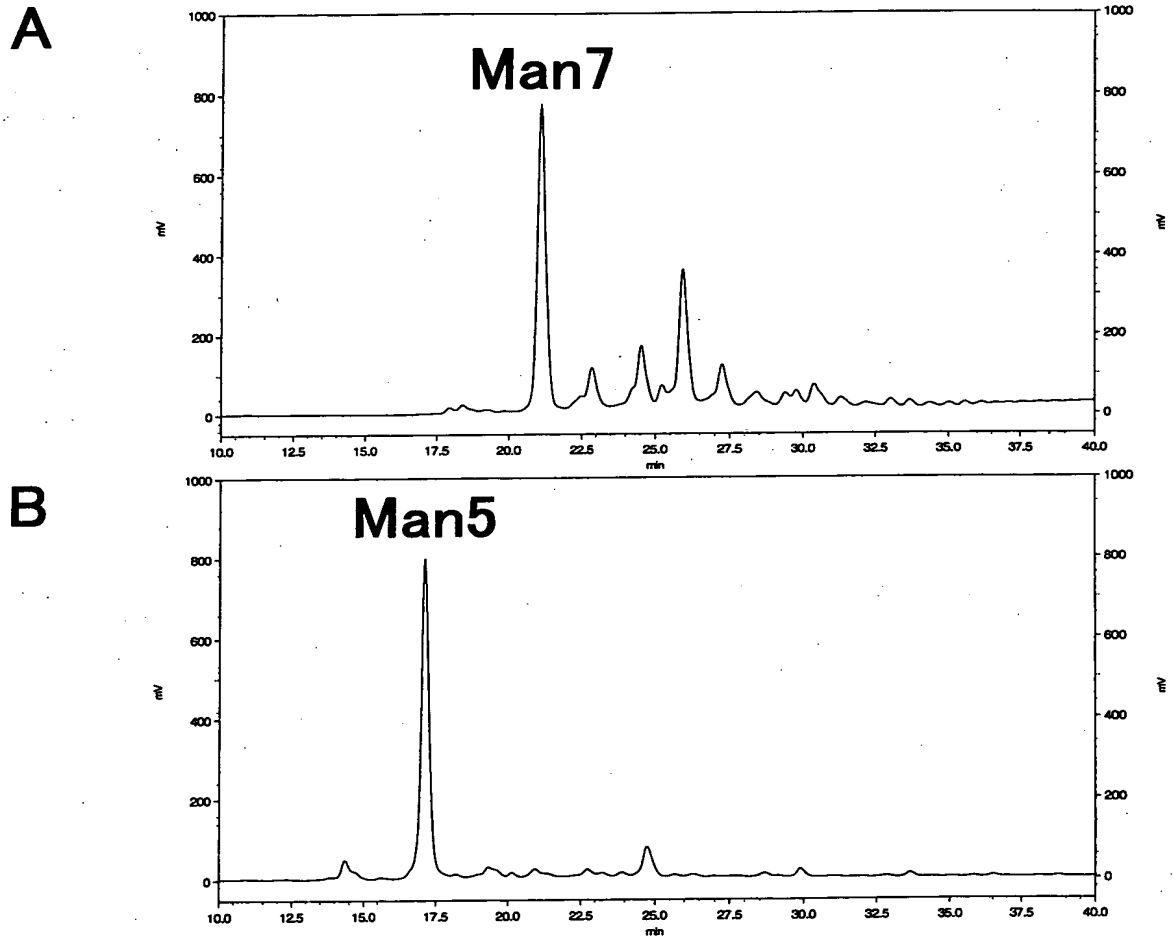
Fig. 23



1. Control antibody

2. Antibody produced by *Ogataea minuta* TK9-IgB-aM strain

Fig. 24



A. *Ogataea minuta* TK9-IgB strain

B. *Ogataea minuta* TK9-IgB-aM strain

Fig. 25

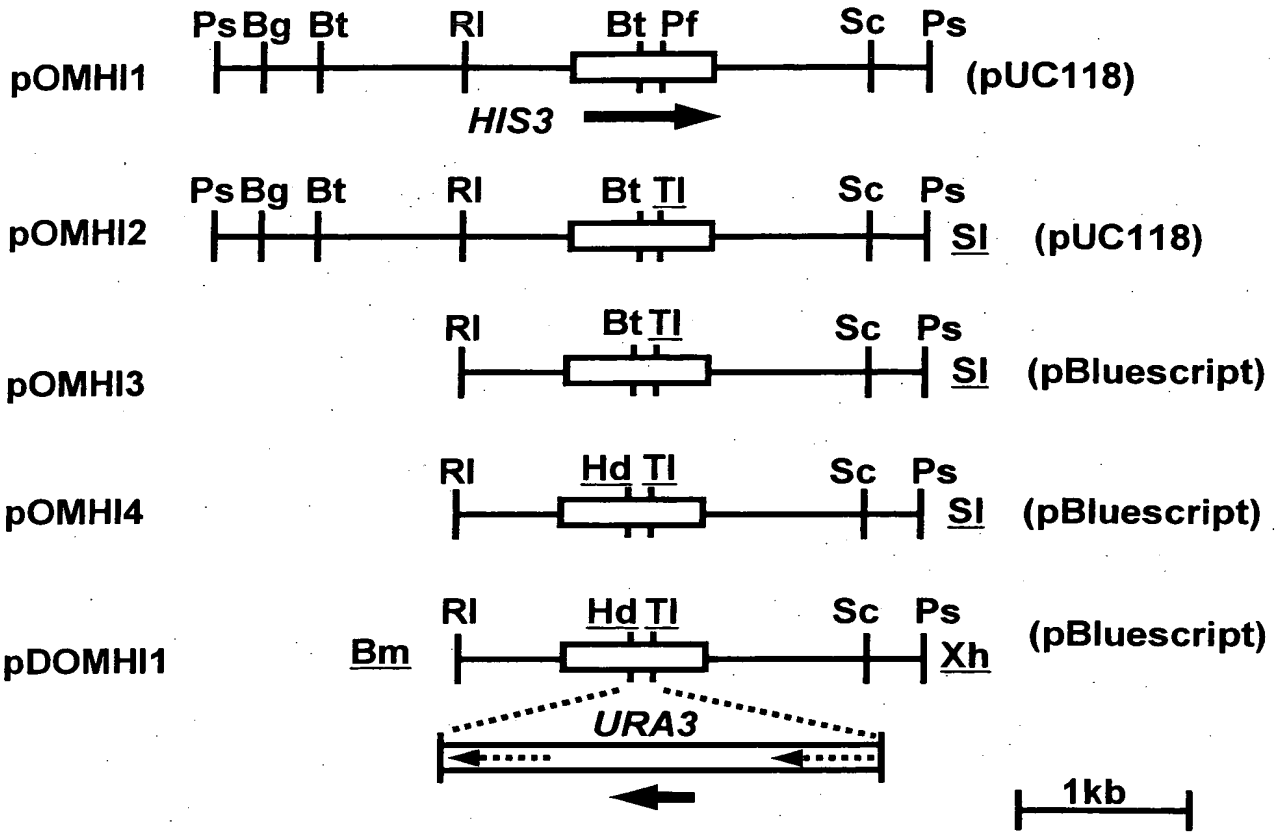

pOMHI1
Ps Bg Bt
RI
Bt Pf
Sc Ps
(pUC118)
HIS3
pOMHI2
Ps Bg Bt
RI
Bt TI
Sc Ps
SI
(pUC118)
pOMHI3
RI
Bt TI
Sc Ps
SI
(pBluescript)
pOMHI4
RI
Hd TI
Sc Ps
SI
(pBluescript)
pDOMHI1
Bm
RI
Hd TI
Sc Ps
Xh
(pBluescript)
URA3
1kb

Fig. 26

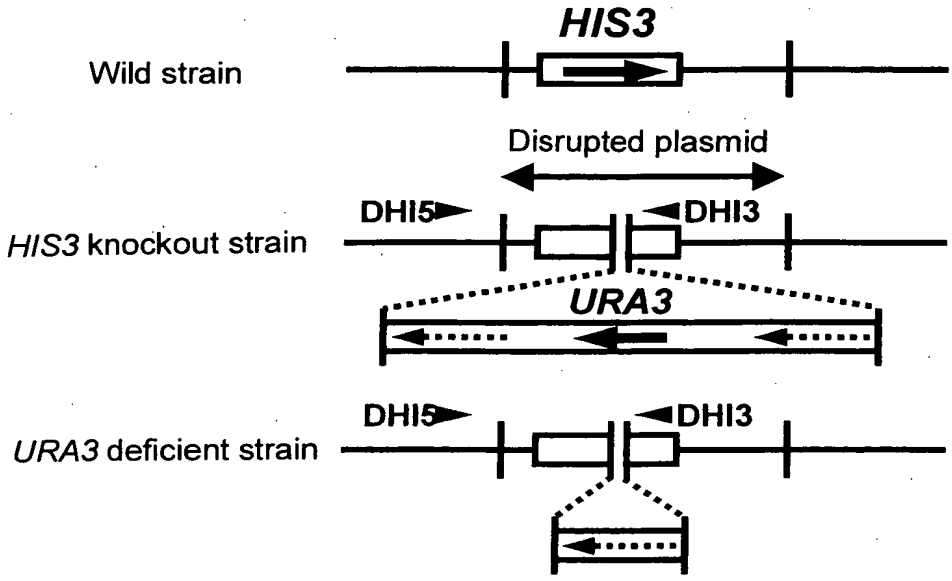

HIS3
Wild strain
Disrupted plasmid
DHI5
DHI3
HIS3 knockout strain
URA3
DHI5
DHI3
URA3 deficient strain

Fig. 27

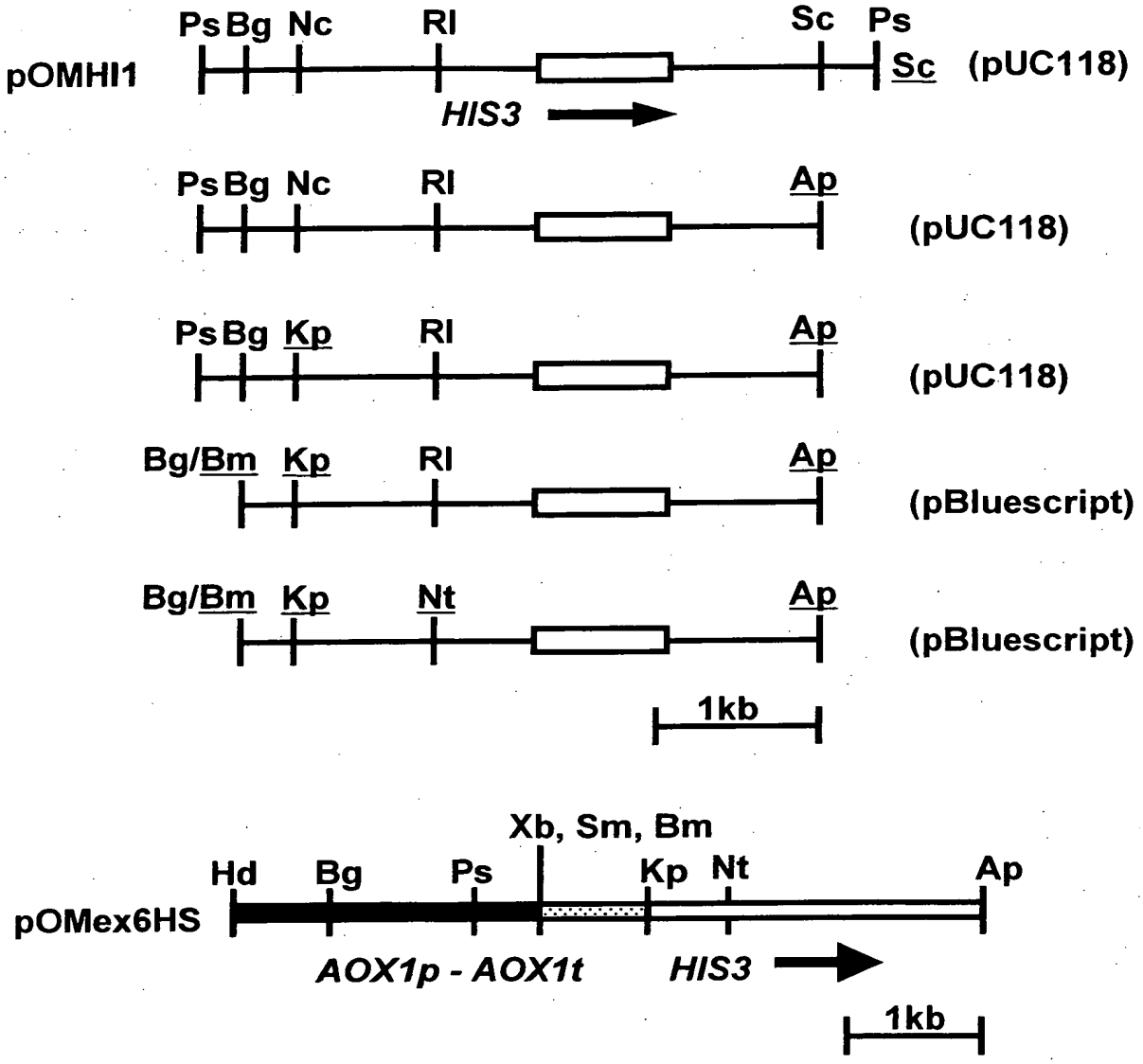

pOMHI1
Ps Bg Nc
RI
Sc Ps
Sc
(pUC118)
HIS3
Ps Bg Nc
RI
Ap
(pUC118)
Ps Bg Kp
RI
Ap
(pUC118)
Bg/Bm Kp
RI
Ap
(pBluescript)
Bg/Bm Kp
Nt
Ap
(pBluescript)
1kb
Xb, Sm, Bm
Hd
Bg
Ps
Kp
Nt
Ap
pOMex6HS
AOX1p - AOX1t
HIS3
1kb

Fig. 28

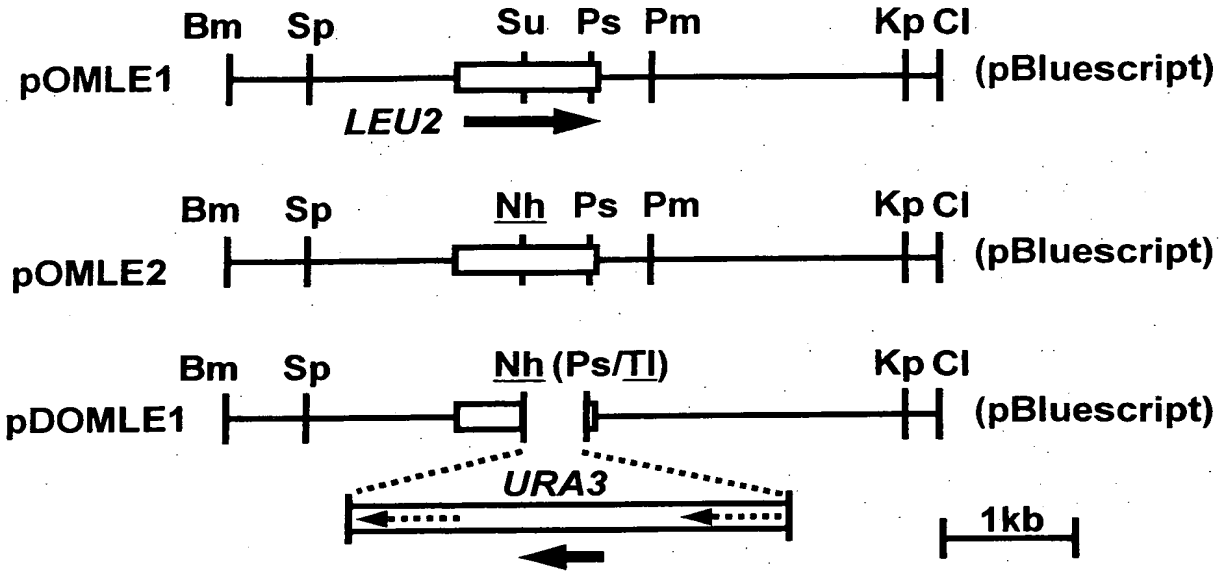

Bm
Sp
Su
Ps
Pm
Kp
Cl
pOMLE1
(pBluescript)
LEU2
Bm
Sp
Nh
Ps
Pm
Kp
Cl
pOMLE2
(pBluescript)
Bm
Sp
Nh (Ps/TI)
Kp
Cl
pDOMLE1
(pBluescript)
URA3
1kb

Fig. 29

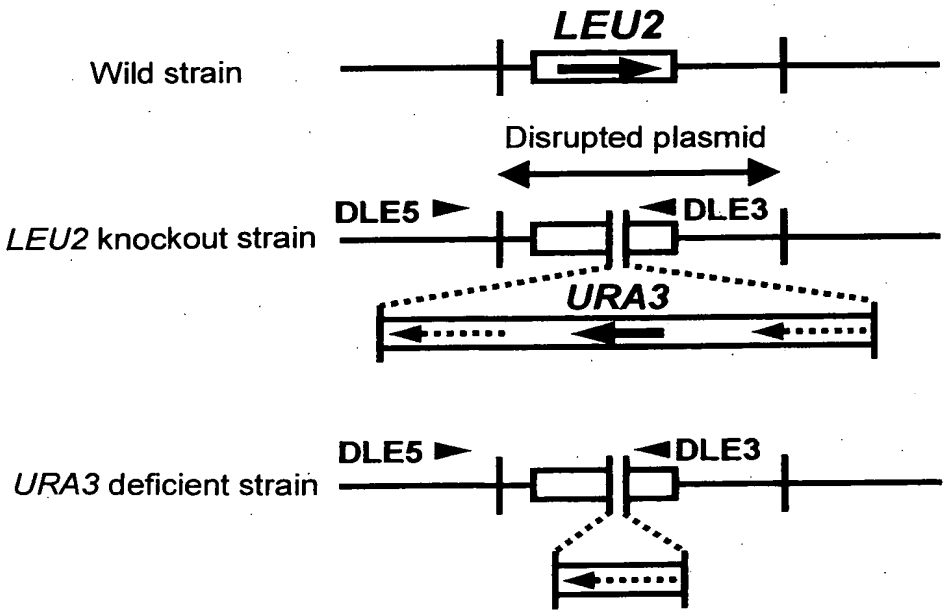

LEU2
Wild strain
Disrupted plasmid
DLE5
DLE3
LEU2 knockout strain
URA3
DLE5
DLE3
URA3 deficient strain

Fig. 30

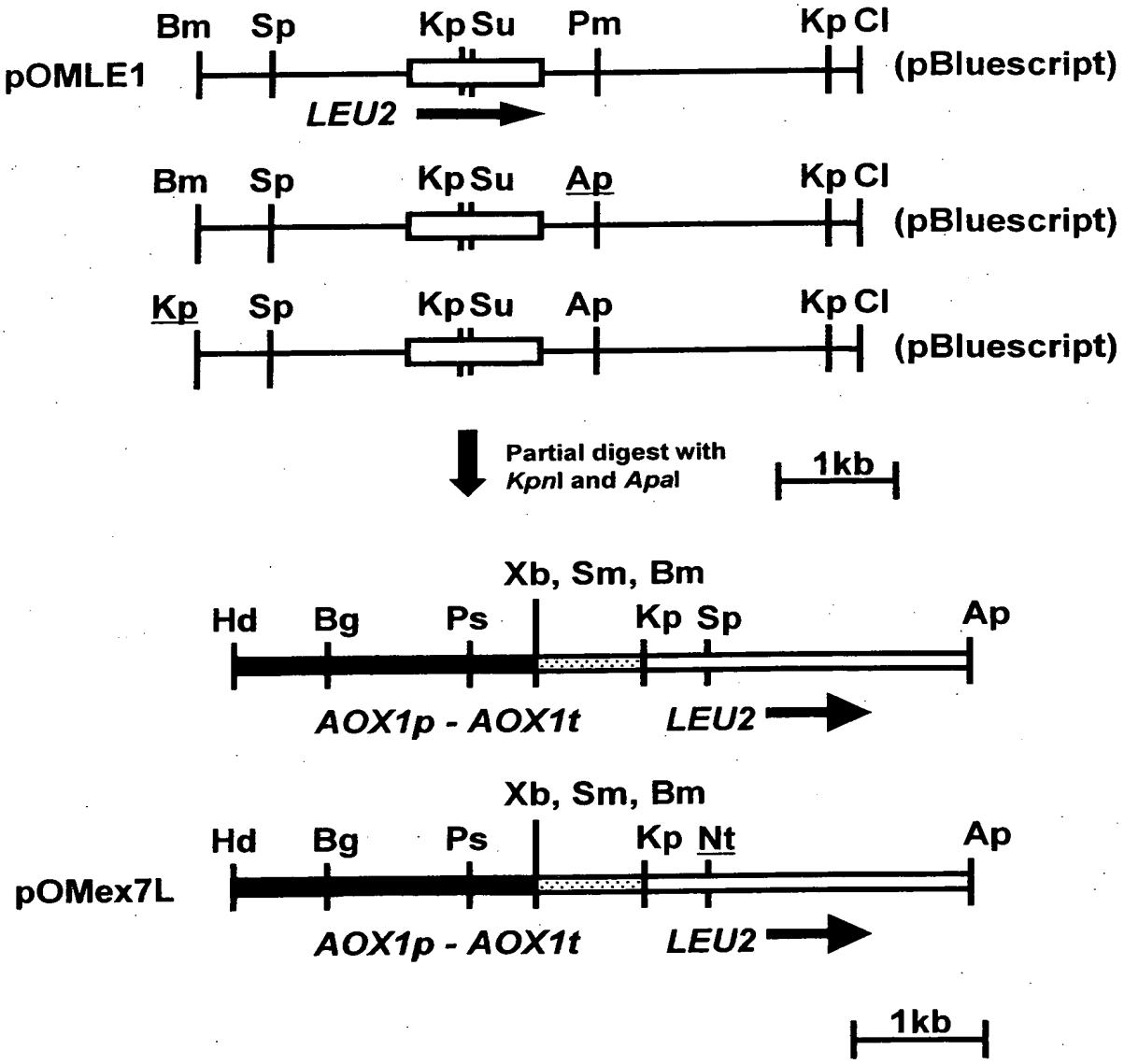

Bm
Sp
Kp Su
Pm
Kp Cl
pOMLE1
(pBluescript)
LEU2
Bm
Sp
Kp Su
Ap
Kp Cl
(pBluescript)
Kp
Sp
Kp Su
Ap
Kp Cl
(pBluescript)
Partial digest with
KpnI and ApaI
1kb
Xb, Sm, Bm
Hd
Bg
Ps
Kp Sp
Ap
AOX1p - AOX1t
LEU2
Xb, Sm, Bm
Hd
Bg
Ps
Kp Nt
Ap
pOMex7L
AOX1p - AOX1t
LEU2
1kb

Fig. 31

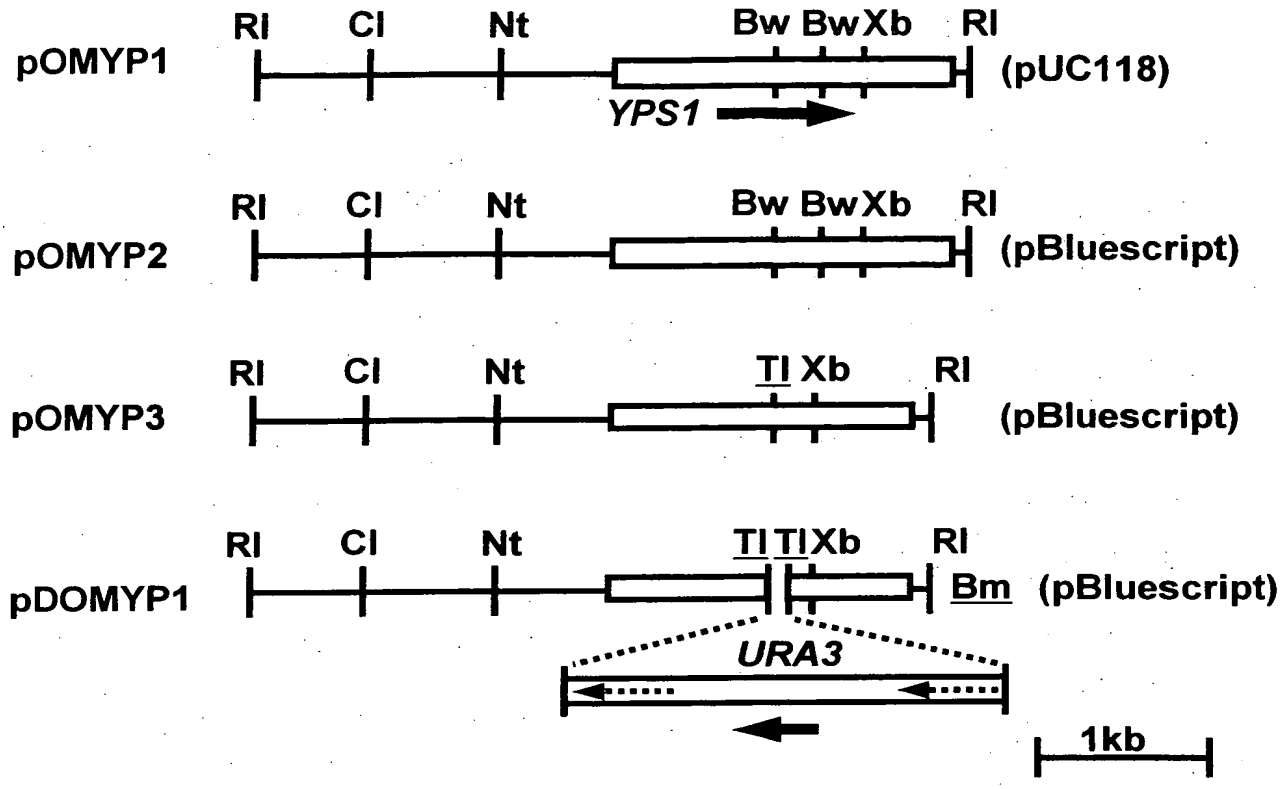

pOMYP1
RI
CI
Nt
Bw BwXb
RI
(pUC118)
YPS1
pOMYP2
RI
CI
Nt
Bw BwXb
RI
(pBluescript)
pOMYP3
RI
CI
Nt
TI Xb
RI
(pBluescript)
pDOMYP1
RI
CI
Nt
TI TIXb
RI
Bm
(pBluescript)
URA3
1kb

Fig. 32

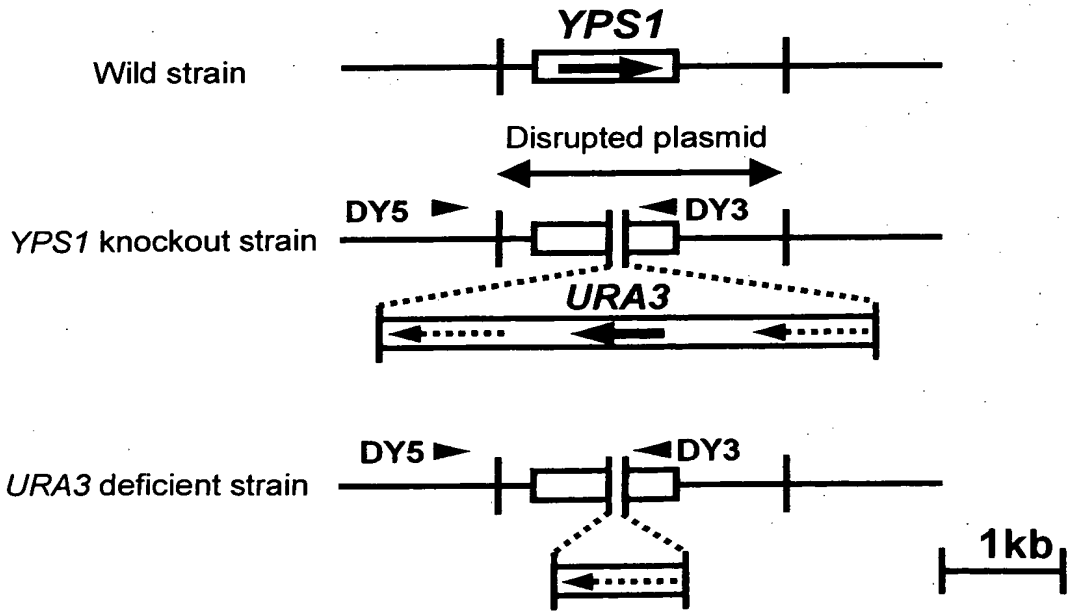

YPS1
Wild strain
Disrupted plasmid
DY5
DY3
YPS1 knockout strain
URA3
DY5
DY3
URA3 deficient strain
1kb

Fig. 33

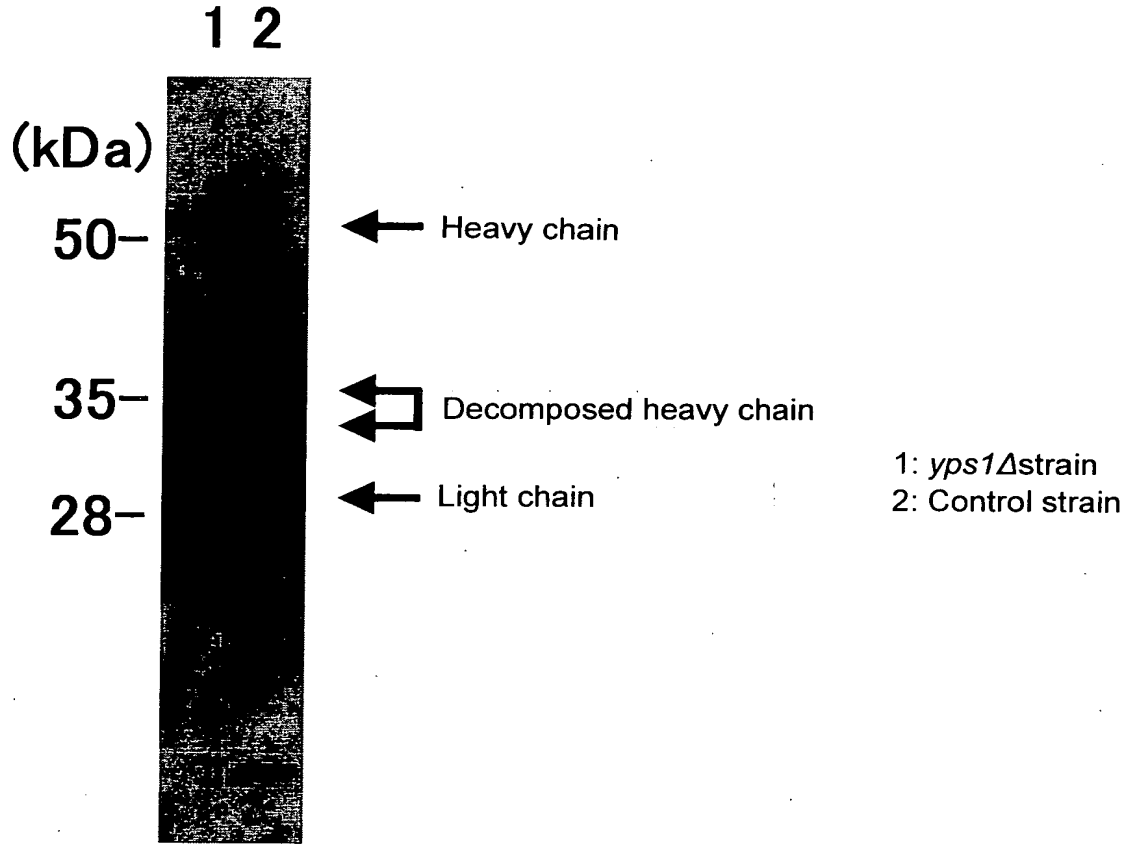
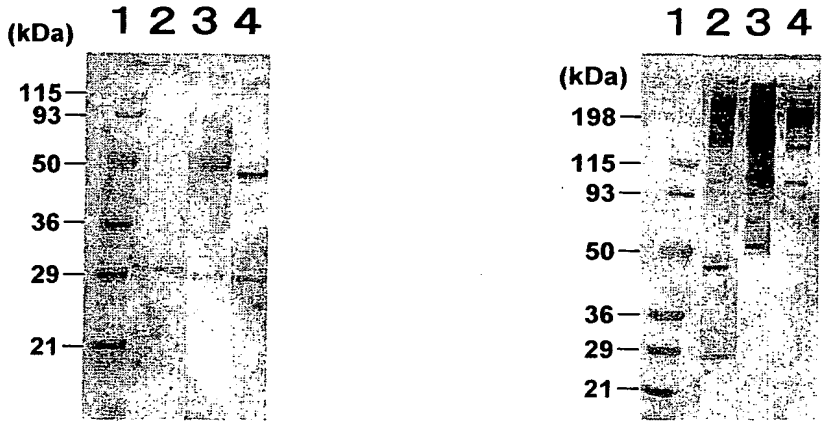

1 2
(kDa)
50–
35–
28–
Heavy chain
Decomposed heavy chain
Light chain
1: yps1Δstrain
2: Control strain

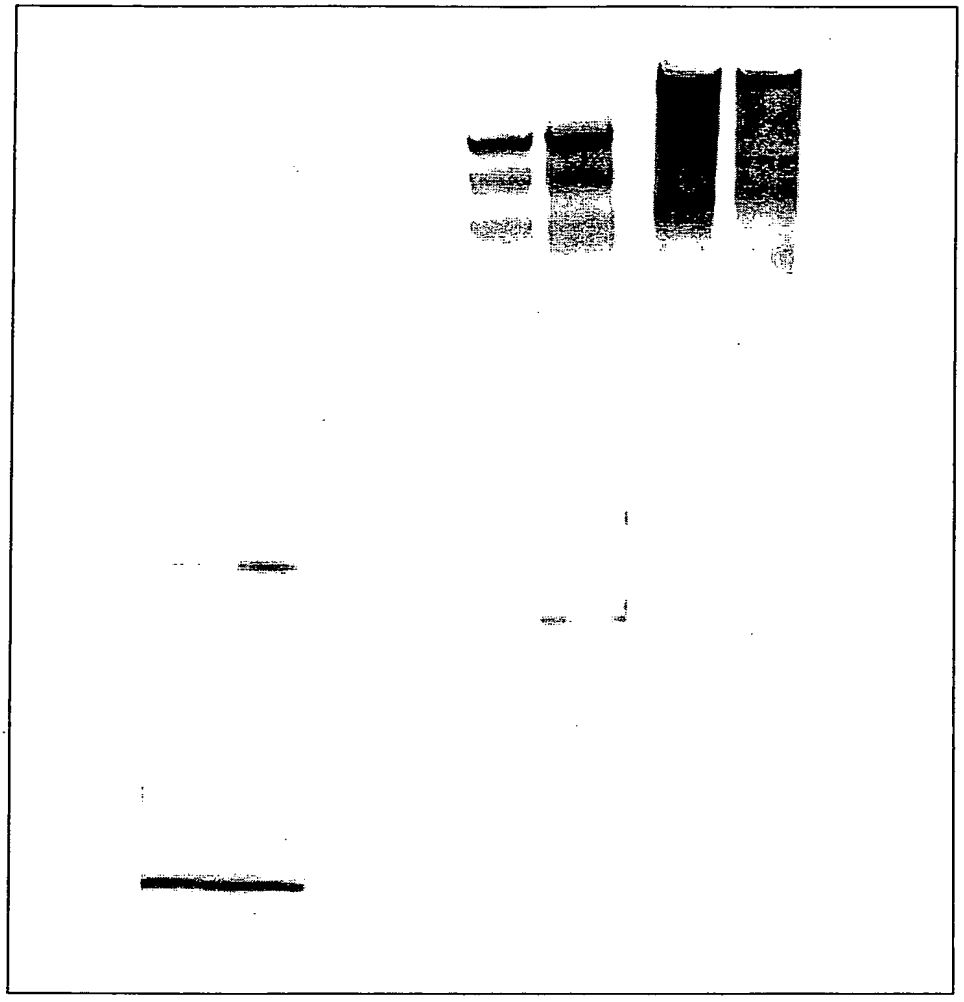
Fig. 34



1 Molecular weight marker
2 Yeast culture supernatant
3 Protein A Elution fraction
4 Control antibody

Fig. 35

1 2 3 4 5 6



Lanes 1, 3, 5 ;
Control strain (Ogataea minuta YK3-IgB1-aM strain)
Lanes 2, 4, 6 ;
PDI-transferred strain (Ogataea minuta YK3-IgB1-aM-P strain)
Lanes 1, 2: Reduced (Culture supernatant)
Lanes 3, 4: Unreduced (Culture supernatant)
Lanes 5, 6: Unreduced (Cell extract)